

DOCUMENT DATA FORM

Your Name: Nick Carino

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Drawing Book 8, Chapter 4: Details and cross-sections at subgrade locations

Include work order no. and floor no. if applicable

Roll # DB03

Doc. ID (report #, dwg. #):

Document Date: *1968-69*

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SHC&R

KEYWORDS - HIGHLIGHT ALL THAT APPLY

Level 1

Bankers Trust
Below Grade

Project 4
Project 5
Project 6
Project 7
Project 8
WFC 1 - Oppenheimer Dow
WFC 2 - Tower B
WFC 3 - American Express
WFC 4 - Tower D

WTC 1 - North Tower
WTC 2 - South Tower
WTC 3 - Marriot Hotel
WTC 4 - South Plaza Bldg.
WTC 5 - North Plaza Bldg
WTC 6 - Customs House
WTC 7
WTC Complex
WTC Plaza

Add

Level 2

Accident analysis & risk
Architectural
Data request
Emergency management
Evacuation

Fire protection
Fire service
Landscaping
Management
Mech./elec.

Misc. Performance Problems
News coverage
Police
Security

Structural
Tenant alterations
Tenant Space
Add

Level 3

1993 explosion
A/E fitout
A-242
A-36
A-497
Aircraft impact
Air cooled condensers
Analysis
Angles
Antenna
Artifacts
Asbestos
Base plate
Beams
Bid documents
Bid Invitation
Bow tie
Bracing
Bridging truss
Building code
Calculations
Carpet
Ceilings
Certification
Chillers
Cladding
Collapse
Columns
Communication systems
Composite truss
Computer output
Computer program
Concrete
Connections
Construction
Contract
Core beams
Core columns
Corrosion
Cracking

Cranes
Criteria
Dampers
Debris
Deck
Deflection
Demolition
Design
Detailing
Doors
Drawings
Eastern States Steel
Egress
Elevator
Elevator Shaft
Emergency communications
Equipment
Erection marks
Errors & Omissions
Escalator
Expansion joint
Exterior columns
Fabrication
Family member
Field survey
Fire alarms
Fireproofing
Fire spread
Fire testing
Firetower
Flag Pole
Flammability
Floor
Floor load
Floor slab
Floor system
Floor trusses
Formwork
Foundations
Fracture

Frame
Frame analysis
Frequency
Fuel
Furniture layout
Generators
Guidelines
Gypsum board
Hat truss
Human comfort
HVAC
Index
Inspection
Insulation
Job number
Joist
L-50
Lighting
Loads
Maintenance
Marking
Mesh reinforcement
Mill inspection
Model
Mullion
Operations
Paint
Partition layout
Partitions
Photos
Pipes
Plumbing
Prestressing
Probability, uncertainty
Quality control
Ramp
Reinforcing (strengthening)
Renovation
Repair
Research & Development

Roof
Safety
Schedule
Sculpture
Security system
Shear knuckle
Shear test
Shear Stud
Shop drawings
Shortening
Slab
Slurry wall
Smoke control
Smoke test
Spandrel beam
Specifications
Splices
Sprinkler
Stability
Stairways
Standards
Steel
Steel composition
Stiffness
Structural review
Surveillance
Survey
Survivor
Tenant list
Tenant occupancy
Testing
Tie
Tolerances
Transfer Girders
Triad
Truss
Vestibule
Vibration
Walls
Water supply
Weather

Weight
Weld detail
Weld size
Welding
Wind
Windows
Yield strength
Add
Drawing books



WTCI-1064-LERA

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON

Structural & Civil Engineers

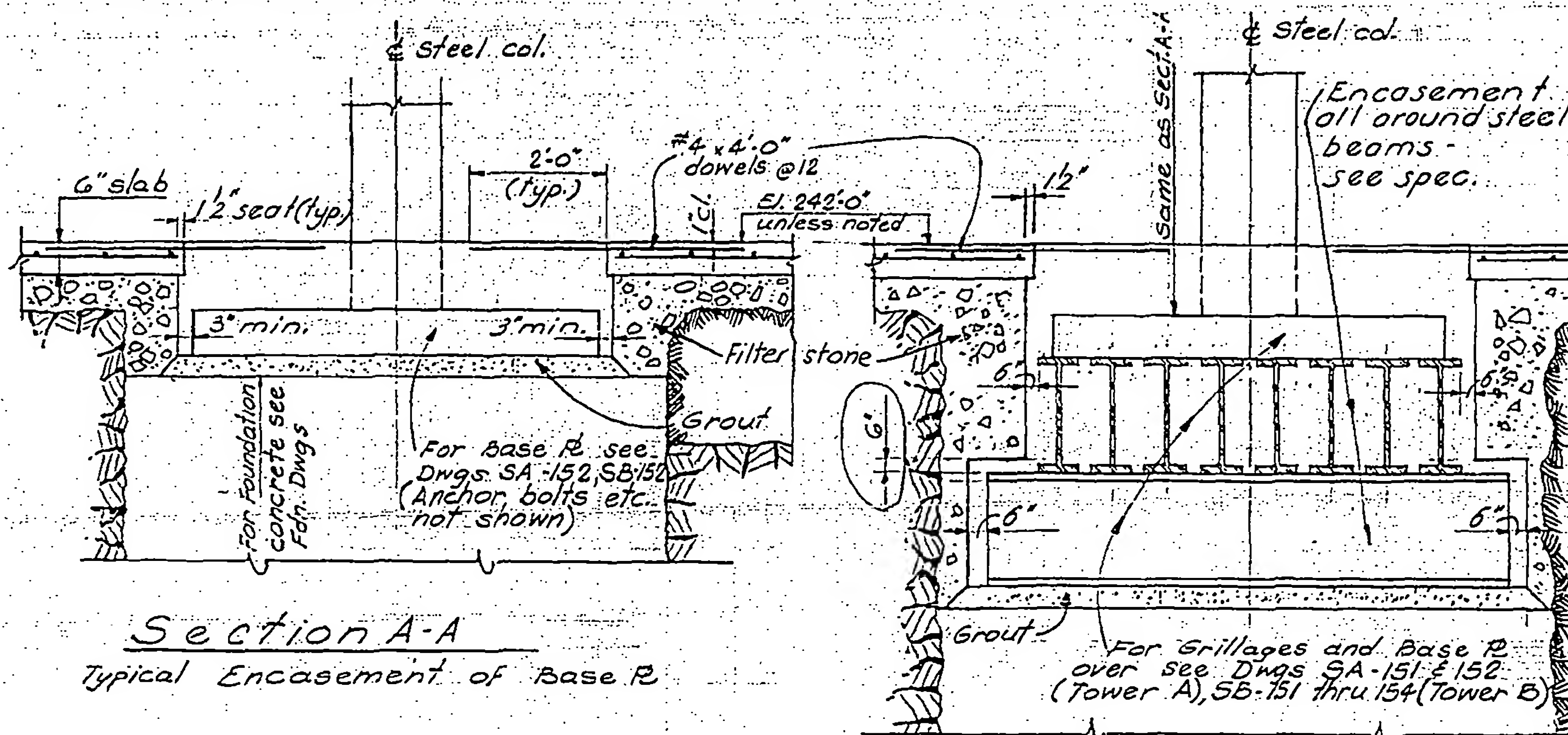
PROJECT THE WORLD TRADE CENTER

TITLE SUBLEVEL #5 ENCASEMENT OF STRUCTURAL STEEL

DATE 5-1-68

REVISIONS

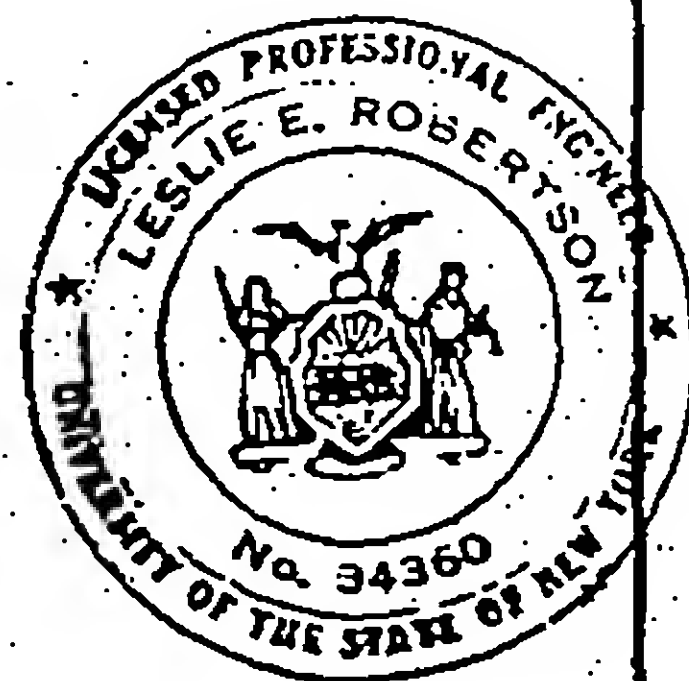
5-9-69



Section A-A
Typical Encasement of Base R

Section B-B
Typical at Foundation Grillages

Note to Sections A-A & B-B
Remove all forms.



8-AB4-2.1

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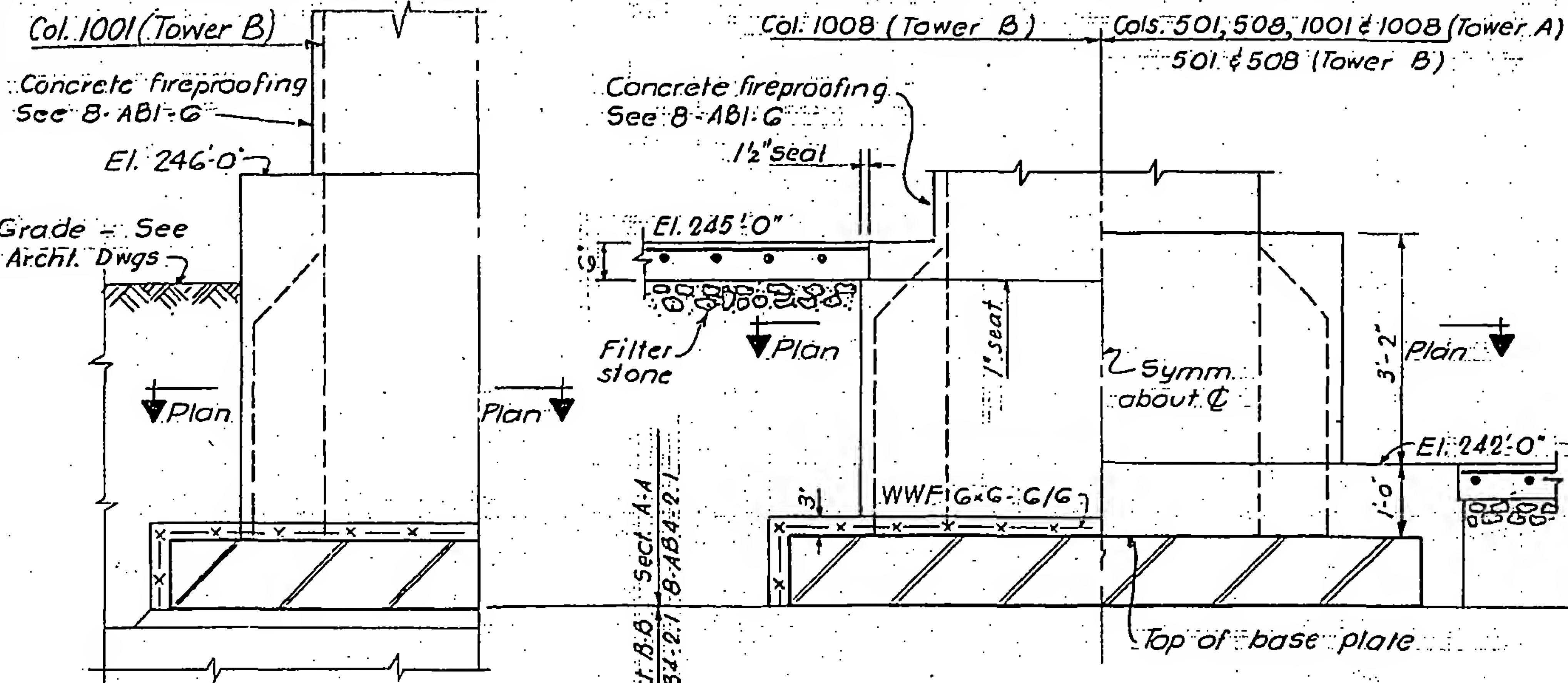
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

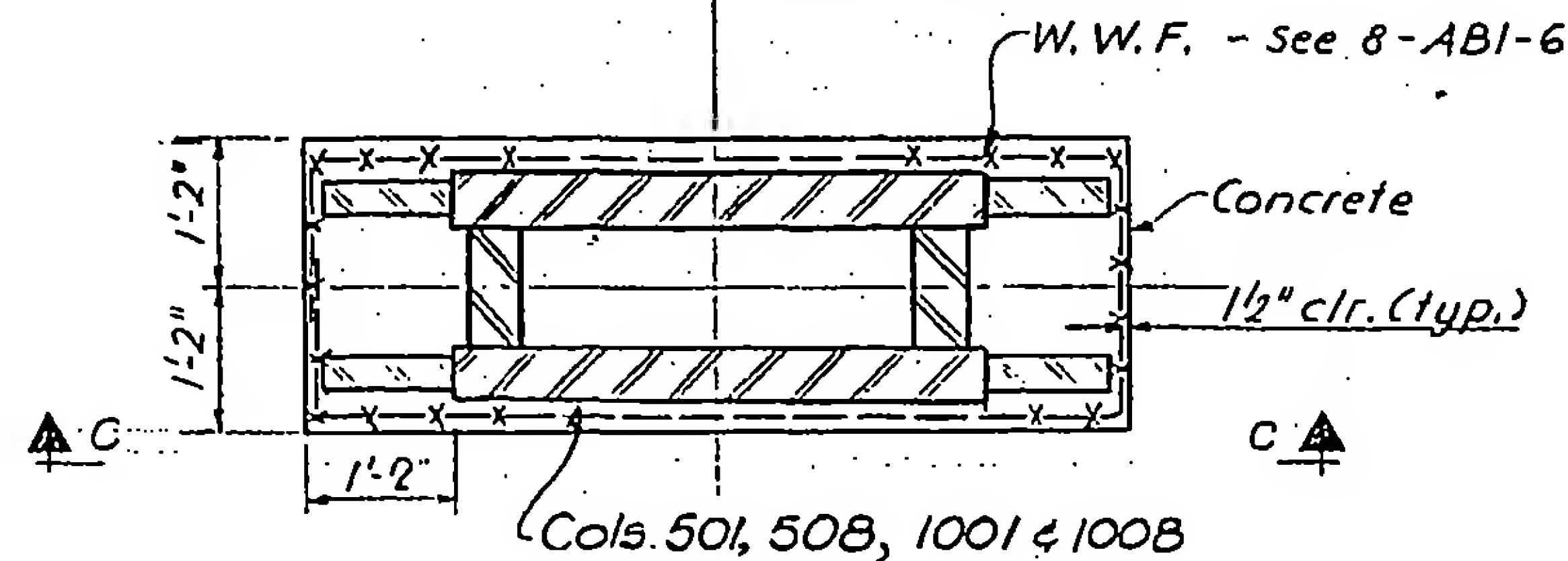
TITLE SUBLEVEL #5, ENCASEMENT OF STRUCTURAL STEEL

DATE 5-1-68

REVISIONS



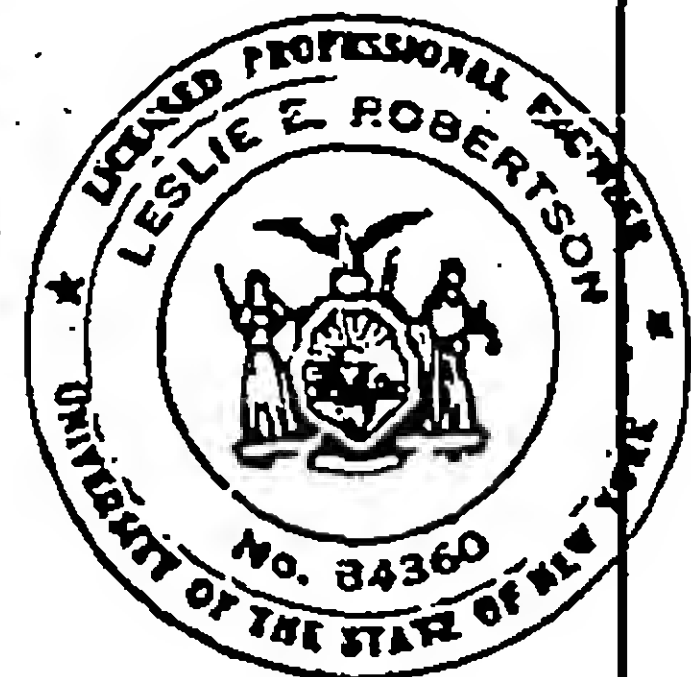
Section C-C



Plan

8-AB4-2.2

1064-L



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PROJECT THE WORLD TRADE CENTER

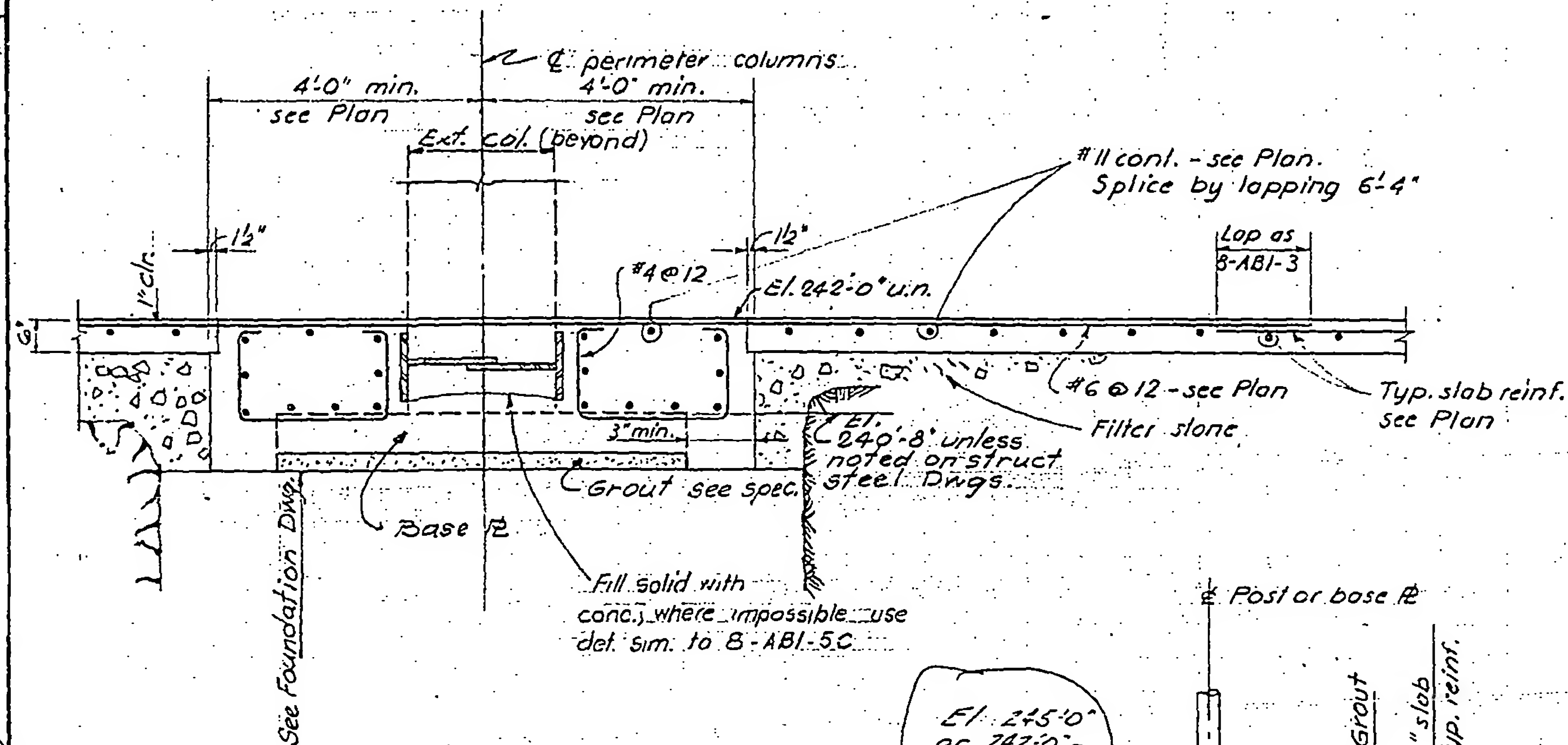
TITLE SUB-LEVEL #5 - ENCASEMENT OF STRUCTURAL STEEL

DATE 5-1-68

REVISIONS

8-29-68

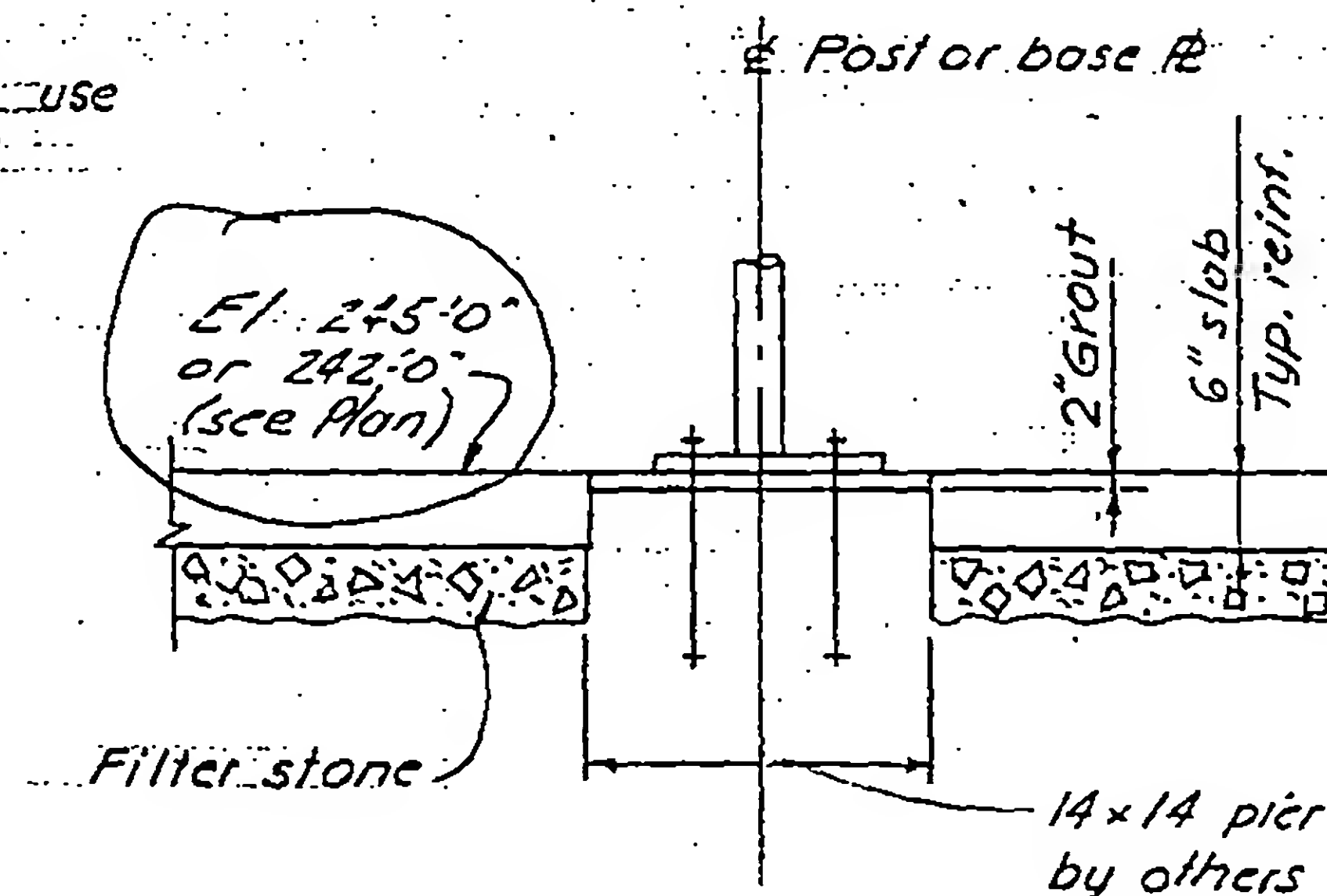
5-9-69



Section D-D

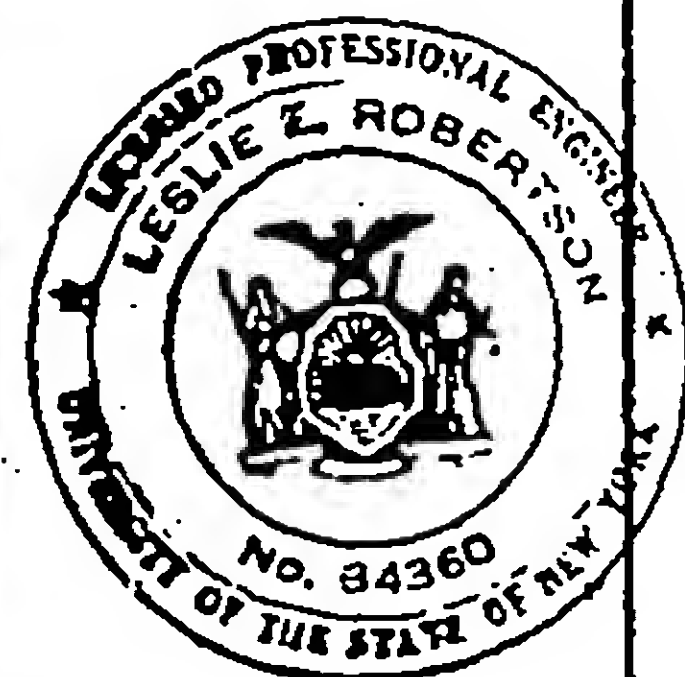
Typical Encasement to Bracing
at Foot of Exterior Tower cols.

Note: Remove all forms



Section E-E

Typical at Post



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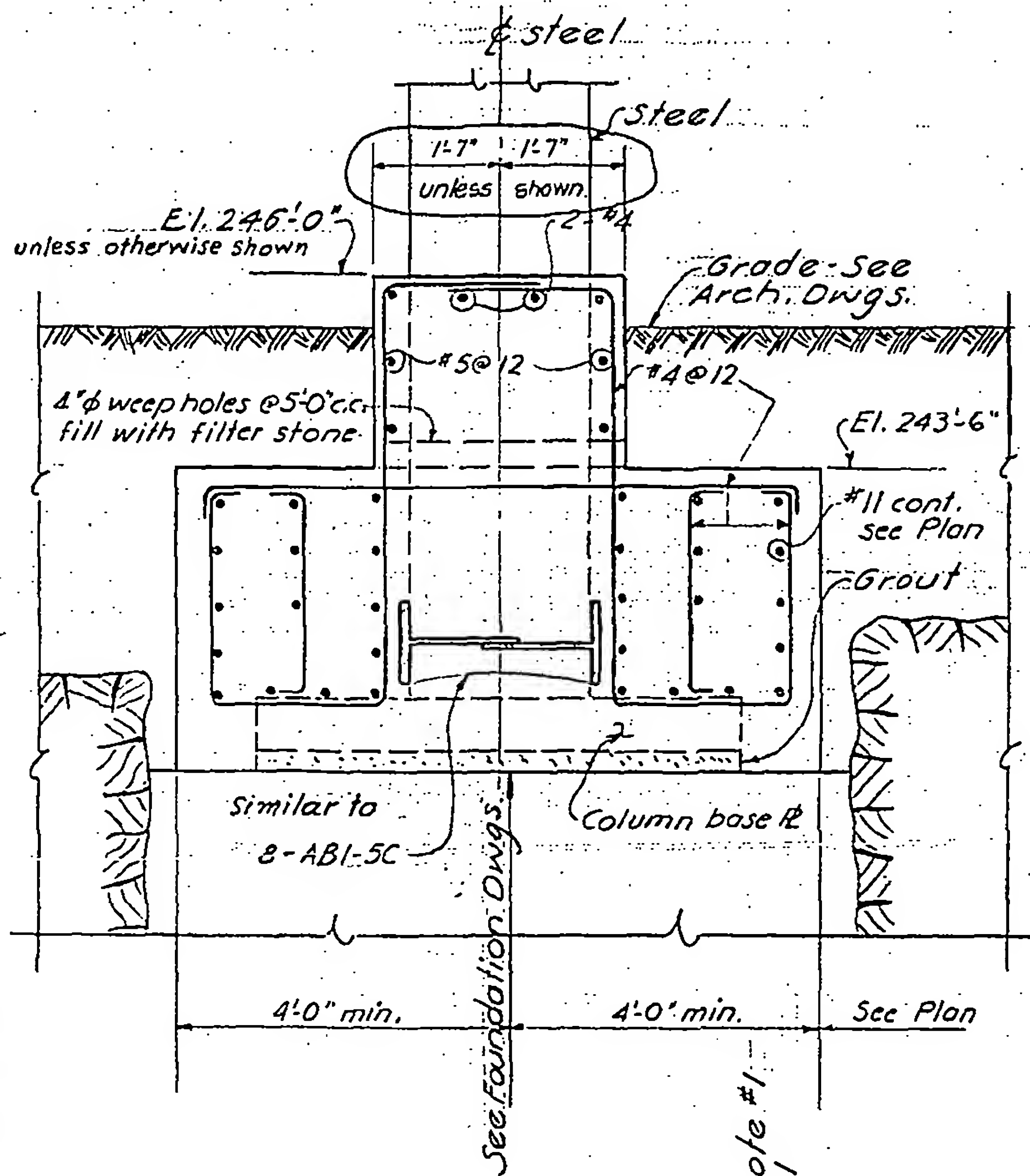
PROJECT THE WORLD TRADE CENTER

TITLE SUB LEVEL #5 ENCASEMENT OF STRUCTURAL STEEL

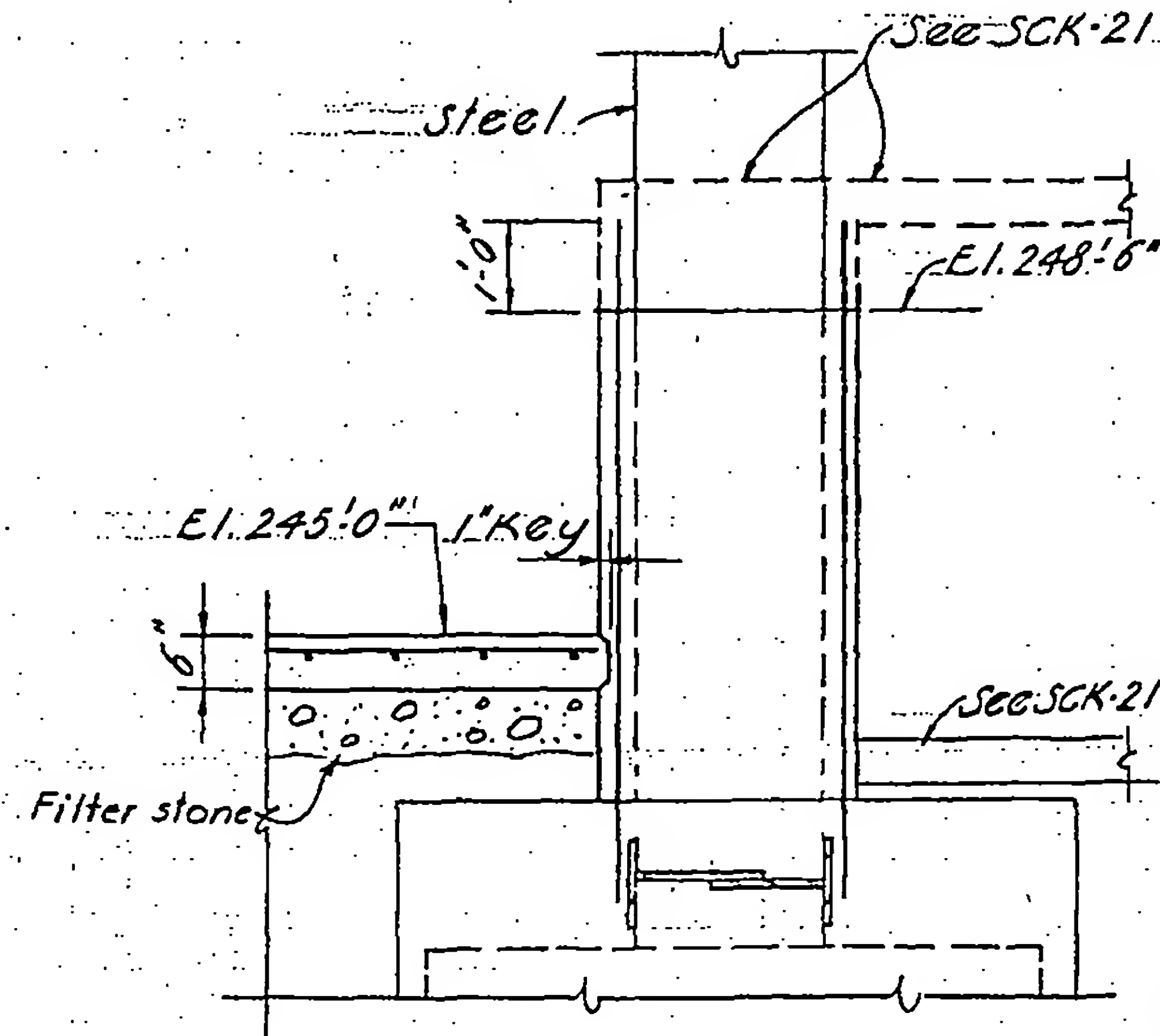
DATE 5-1-68

REVISIONS

5-9-69

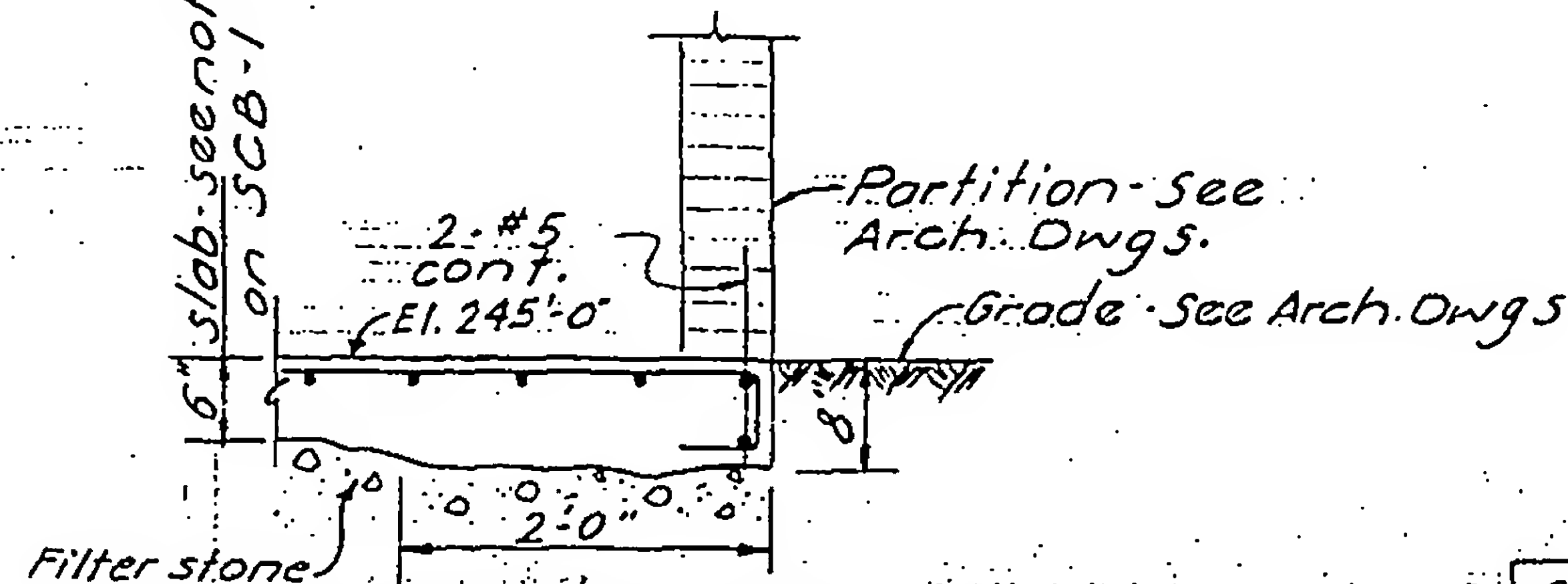


Section F-F



Section G-G

Similar to section F-F except as shown.



Section H-H

8-AB4-2.4



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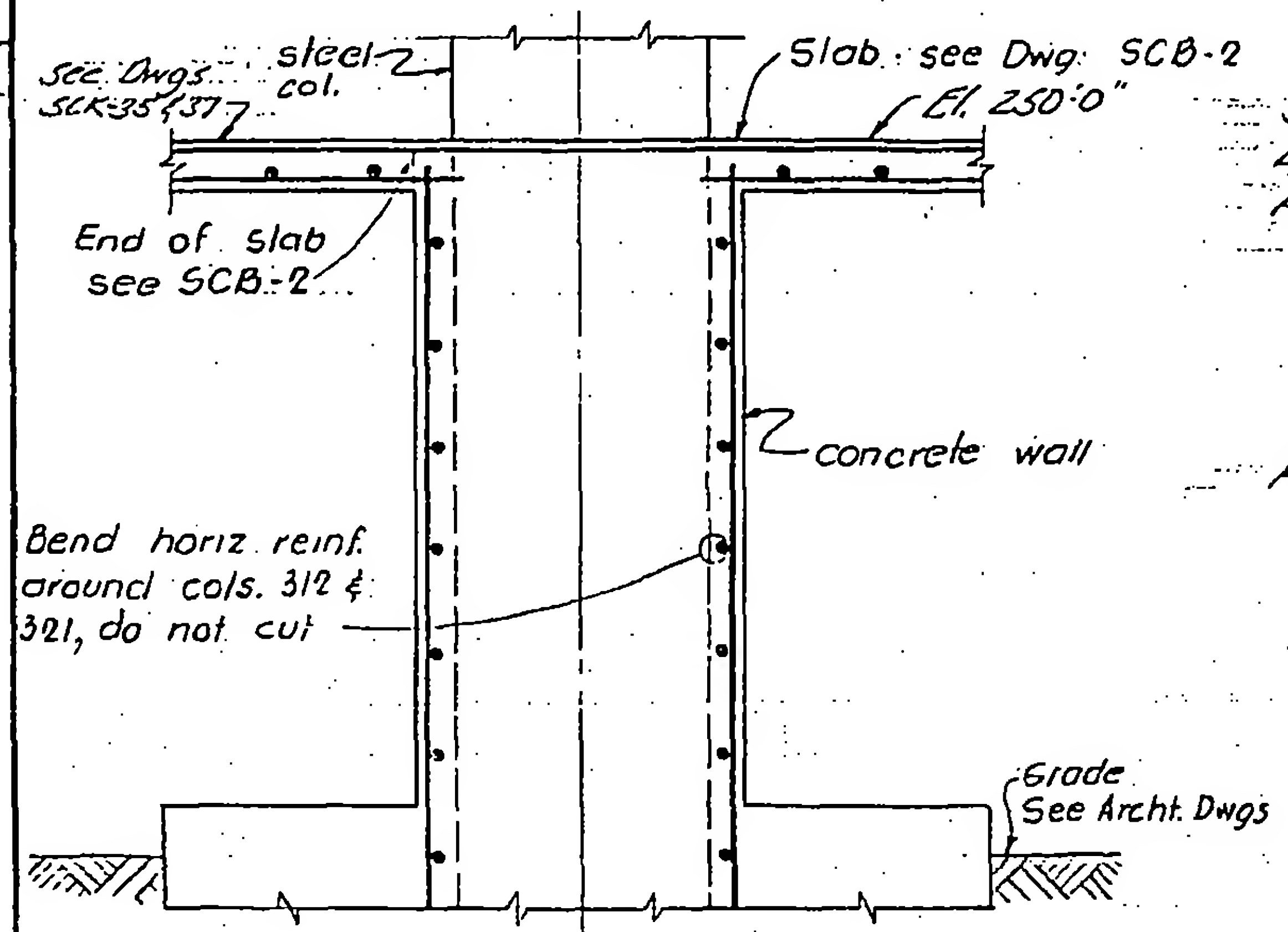
PROJECT THE WORLD TRADE CENTER

TITLE SUB-LEVEL #5- ENCASEMENT OF STRUCTURAL STEEL

DATE 5-1-68

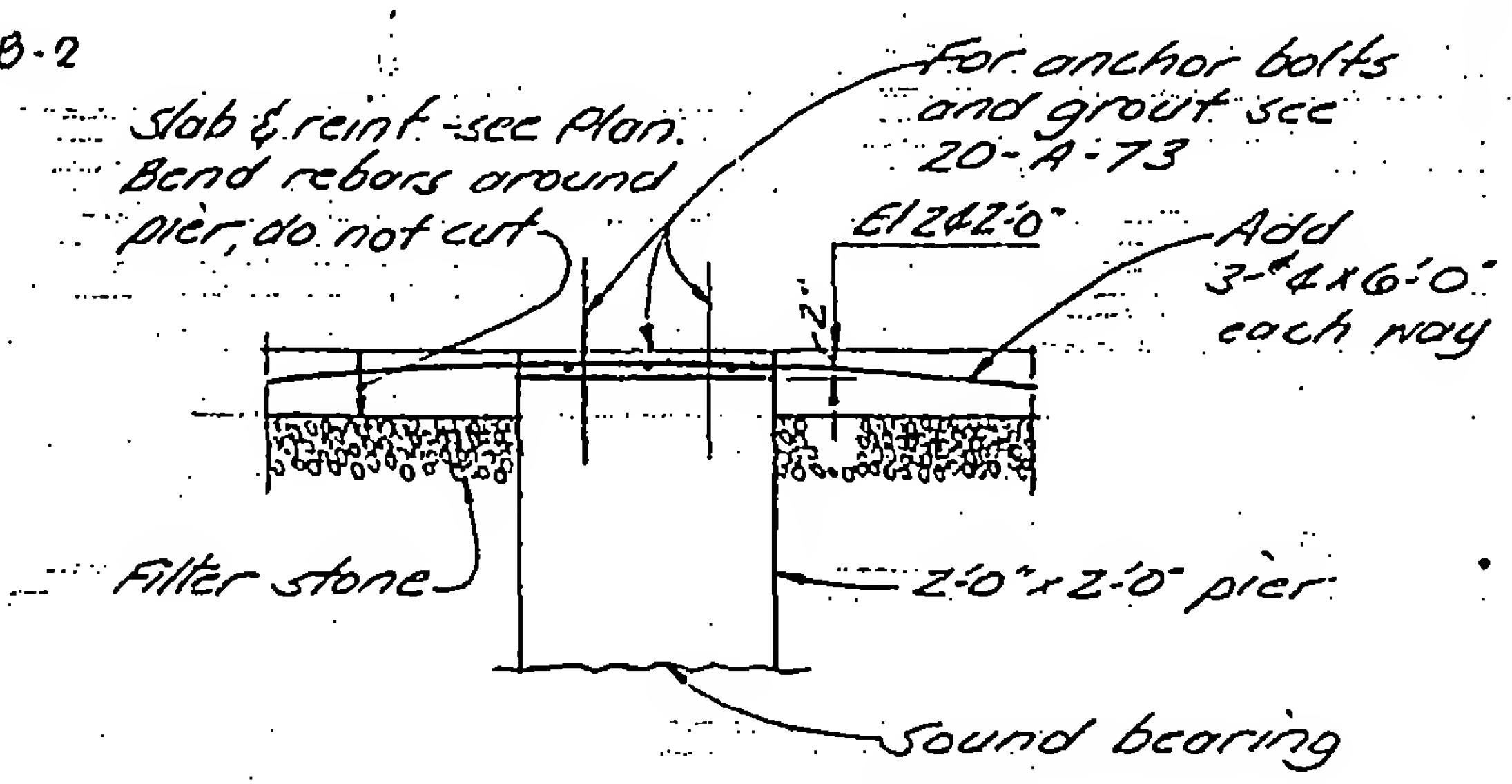
REVISIONS

3-25-69
5-6-69

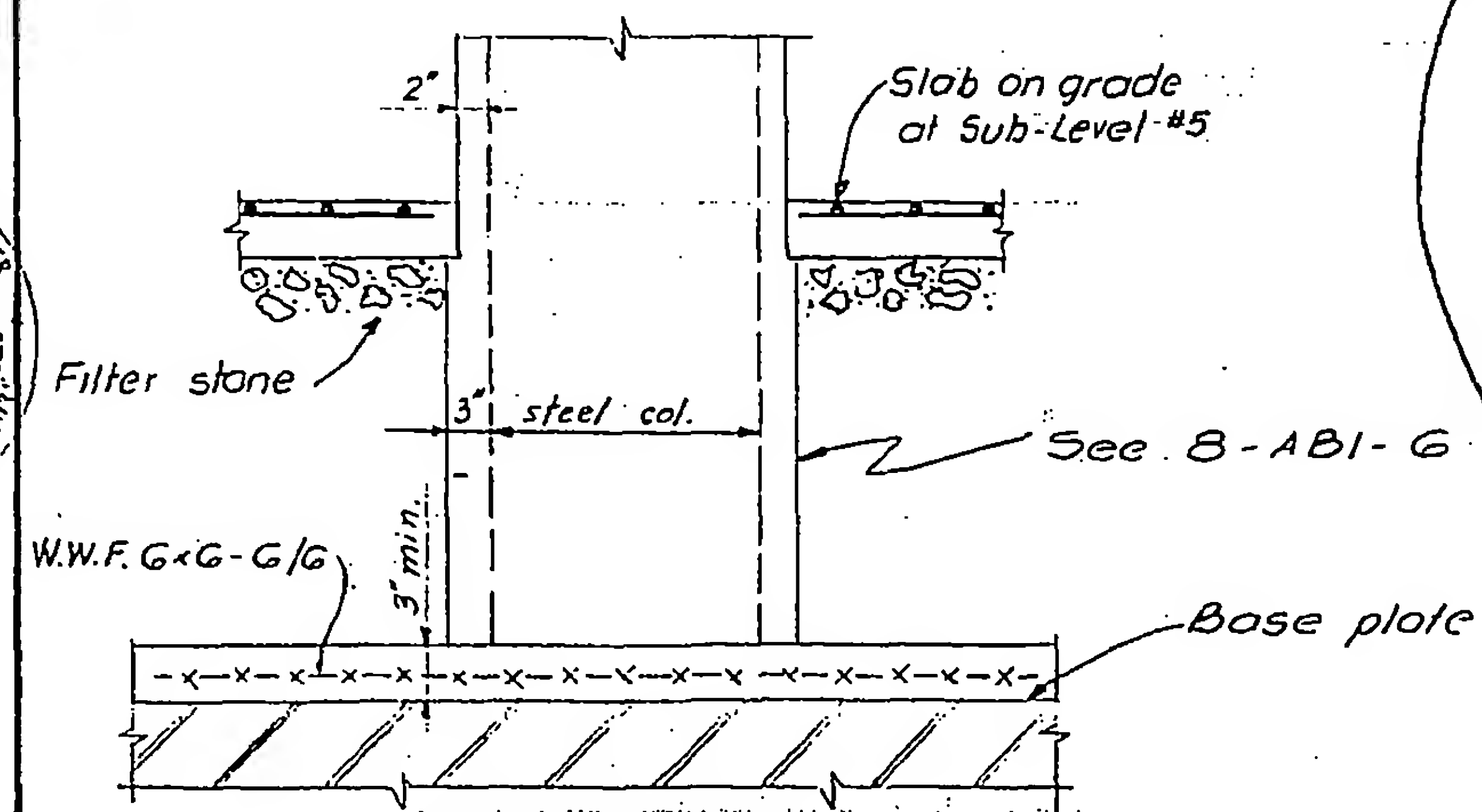


Section J-J

Similar to Section F-F except as shown

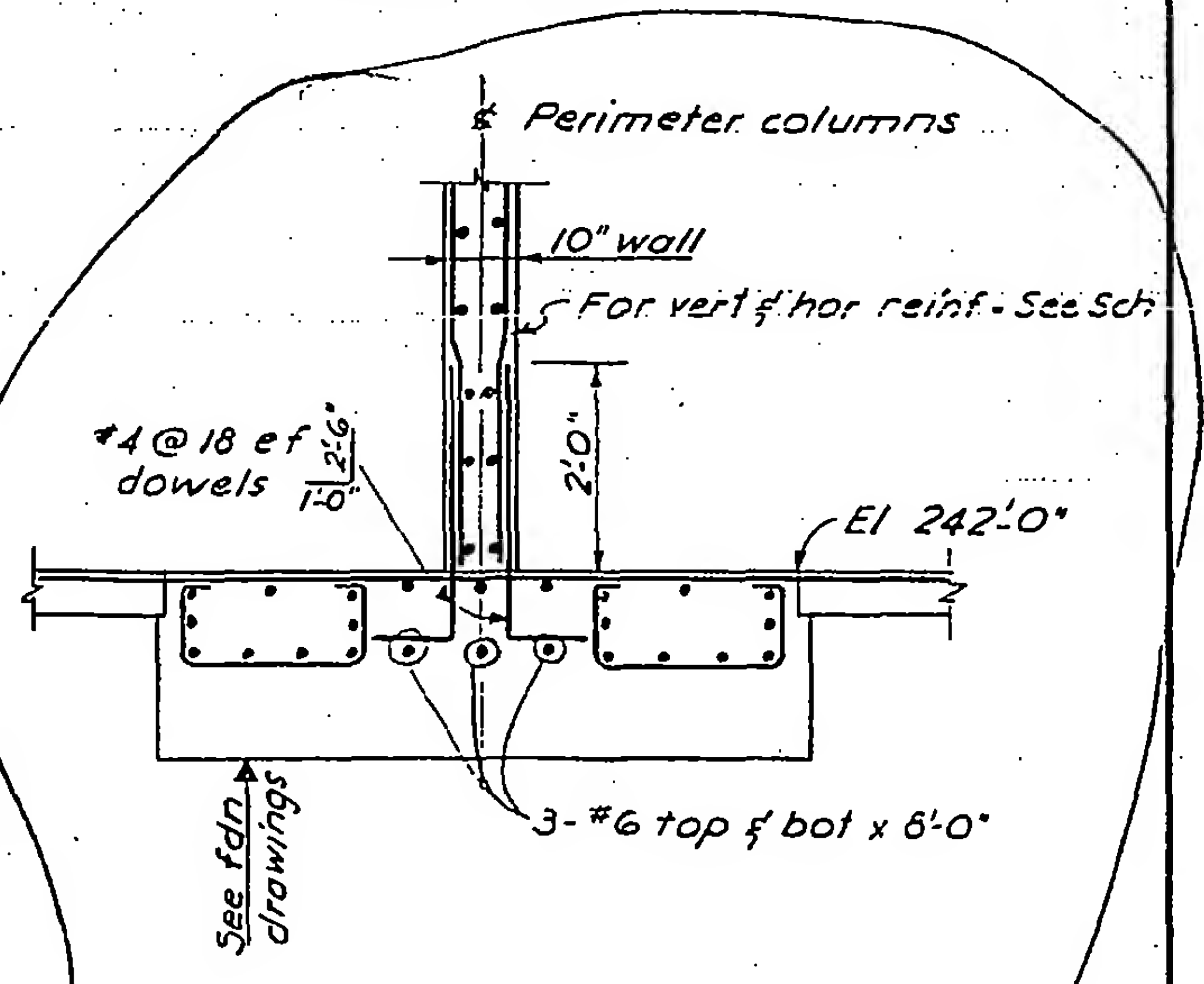


Section N-N



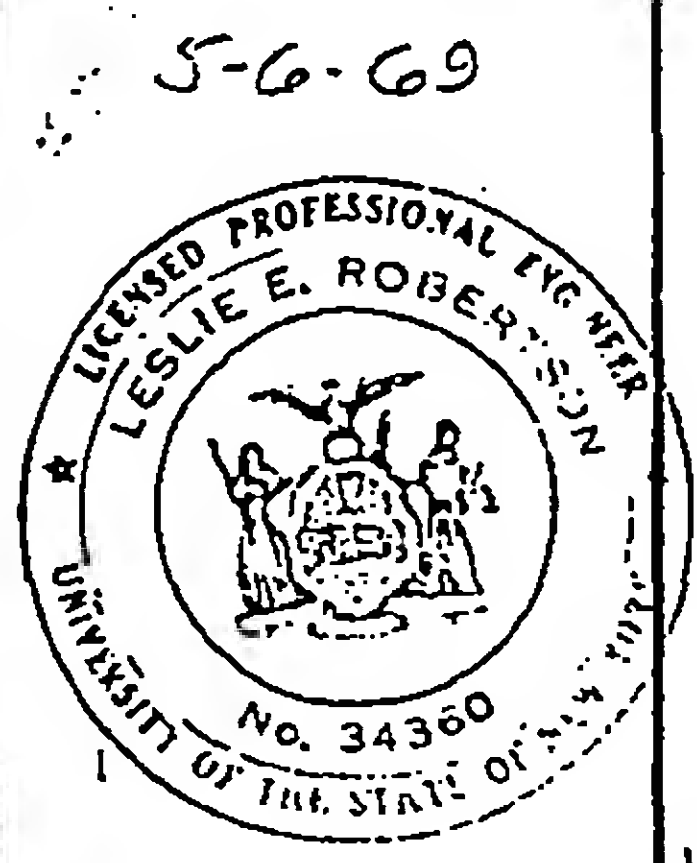
Section L-L

Typical of Concrete Fireproofed Columns (unless noted)



Section P-P

Same as Section 8-AB4-2D except as shown



8-AB4-2.5

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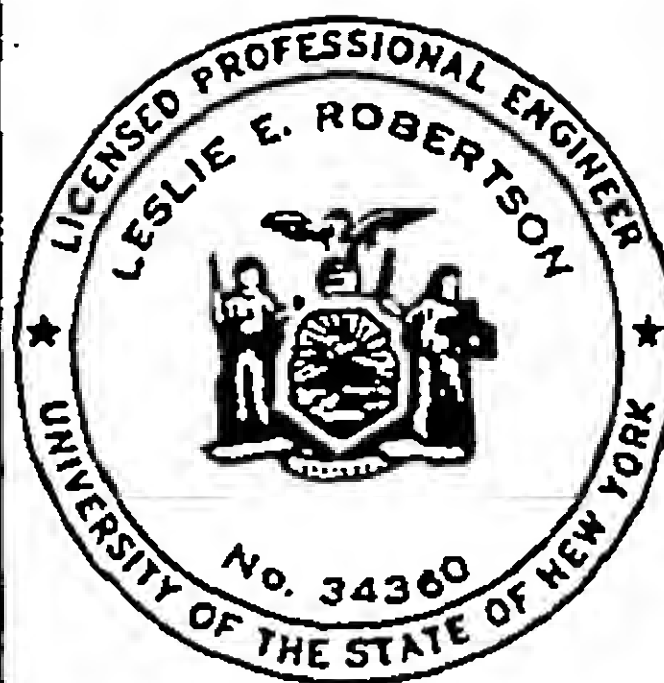
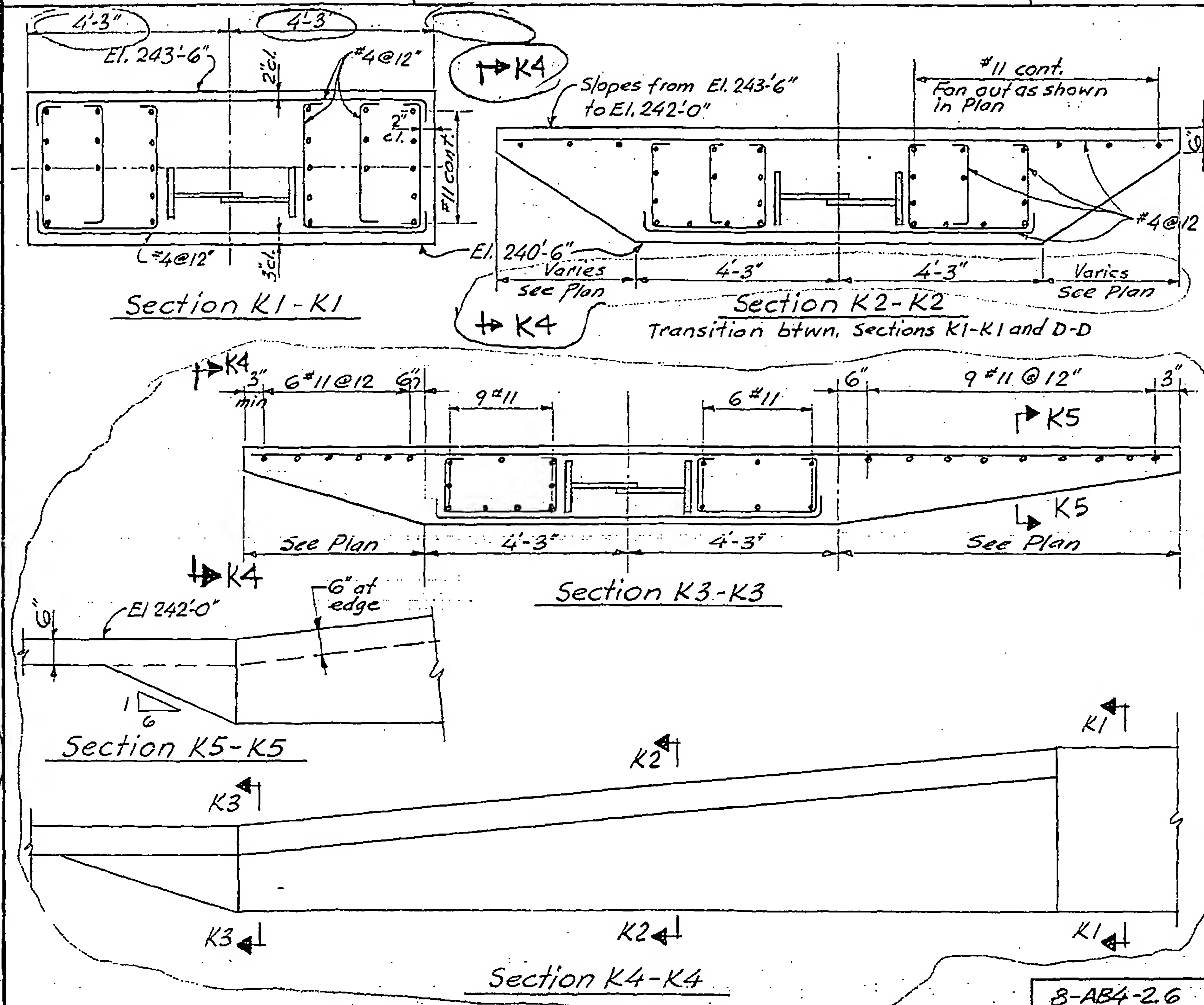
PROJECT *THE WORLD TRADE CENTER*

TITLE SUB-LEVEL #5-ENCASEMENT OF STRUCT. STEEL

DATE 5-1-68

REVISIONS

12/12/69



DESIGNED

DRAWN

REVIEWED

8-AB4-2.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

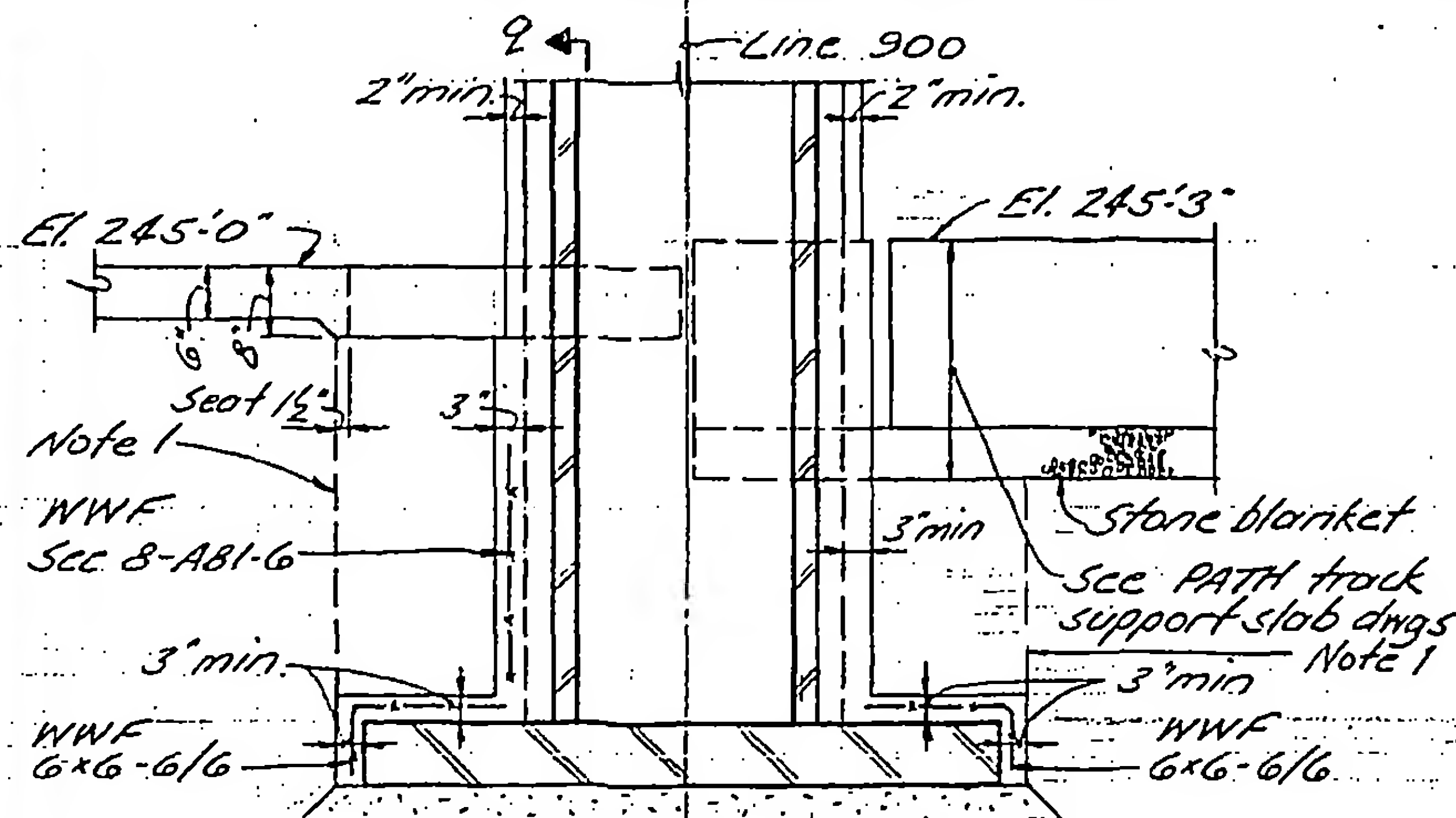
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

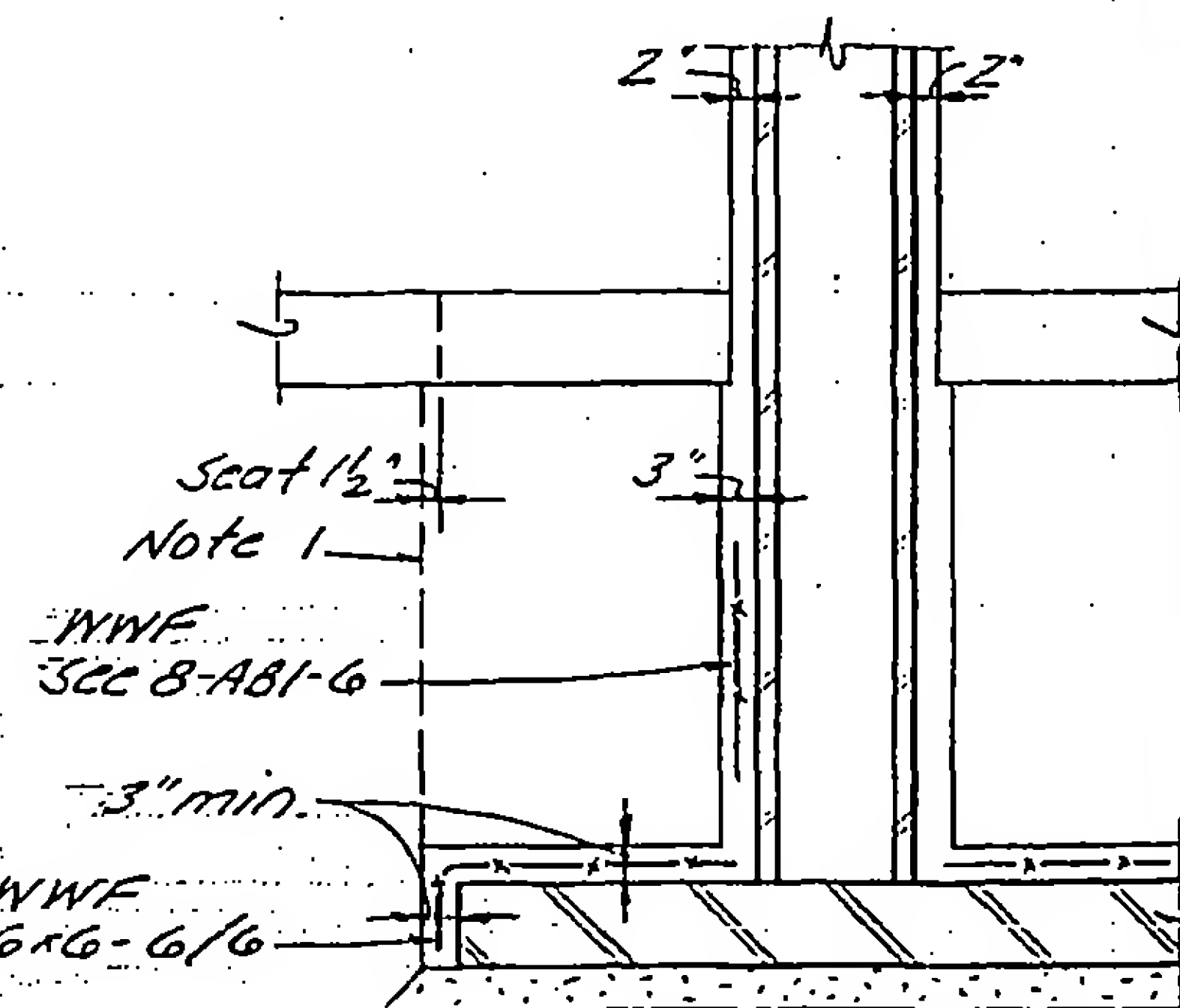
TITLE SUBLEVEL 5-ENCASEMENT OF STRUCTURAL STEEL

DATE 1-2-70

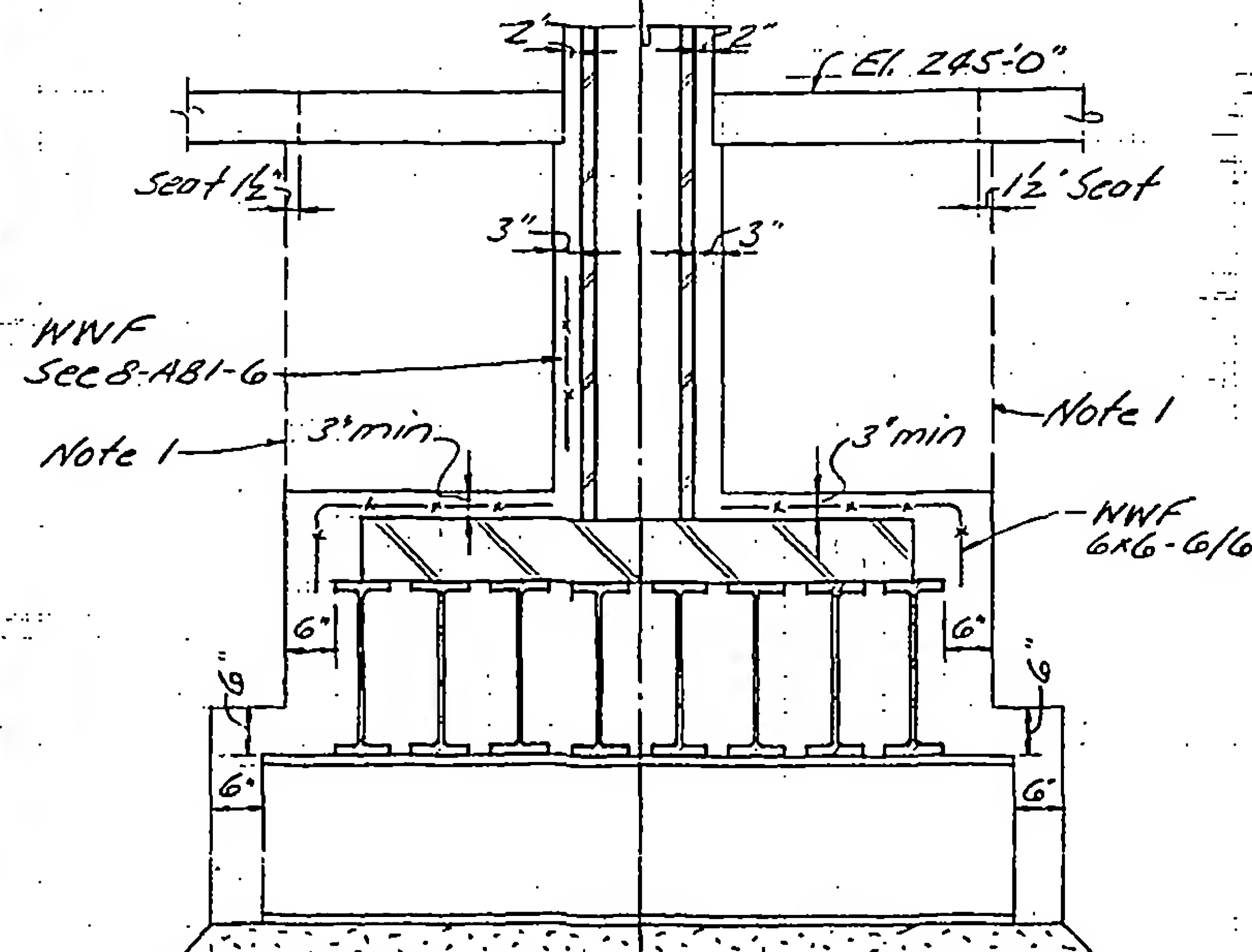
REVISIONS



Section Q-Q



Section 9-9



Section R-R

Note 1
At Contractor's option concrete may be cast up to this line. Where this option used, omit WWF and provide #4 @ 12" each way 2" clear of face of concrete.



DESIGNED

DRAWN

J. Adams

REVIEWED

W. Brewer

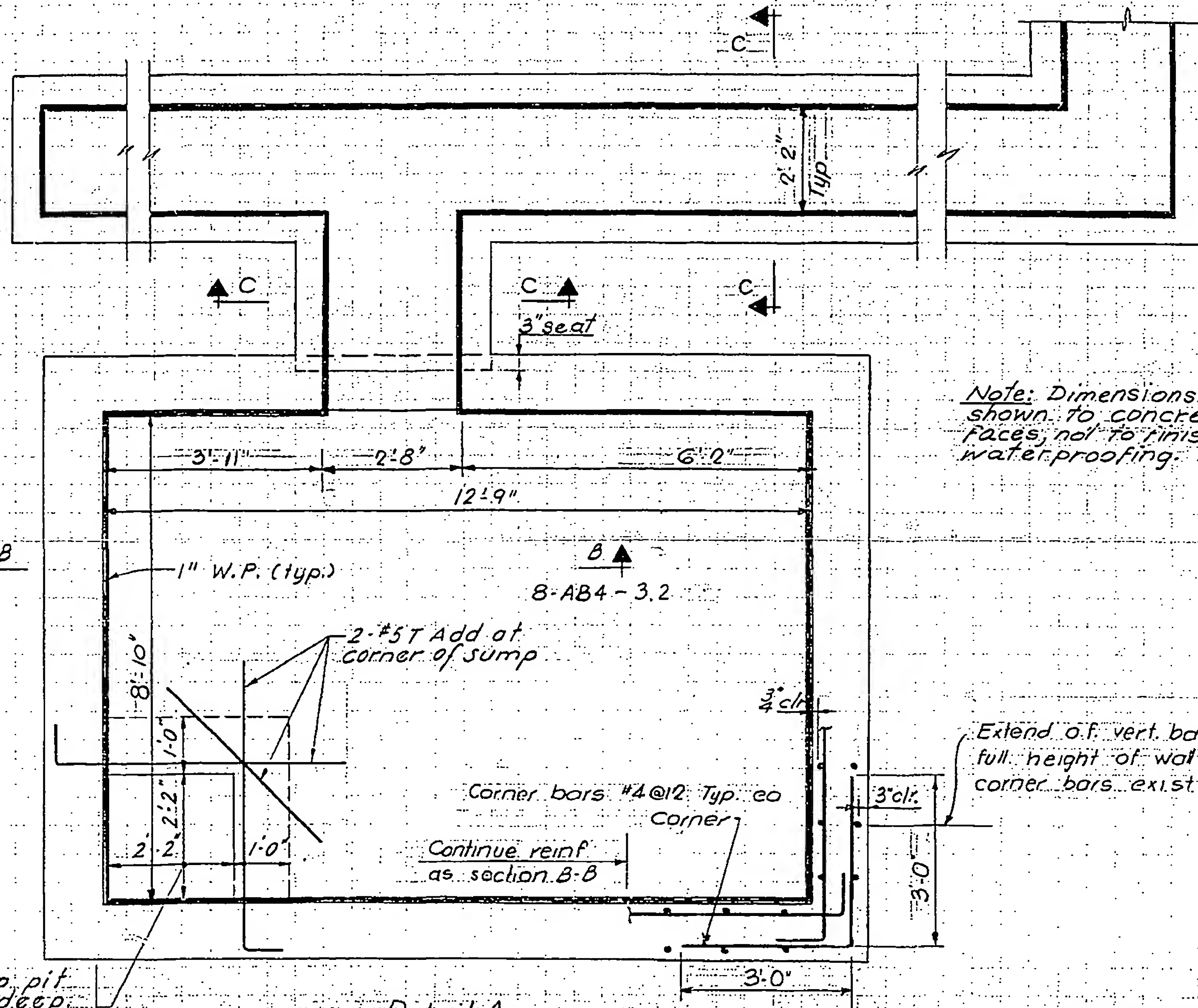
8-AB4-2.7

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TITLE SUB-LEVEL #5 CONDENSATE PIT & TRENCHES

DATE 5-1-68

REVISIONS



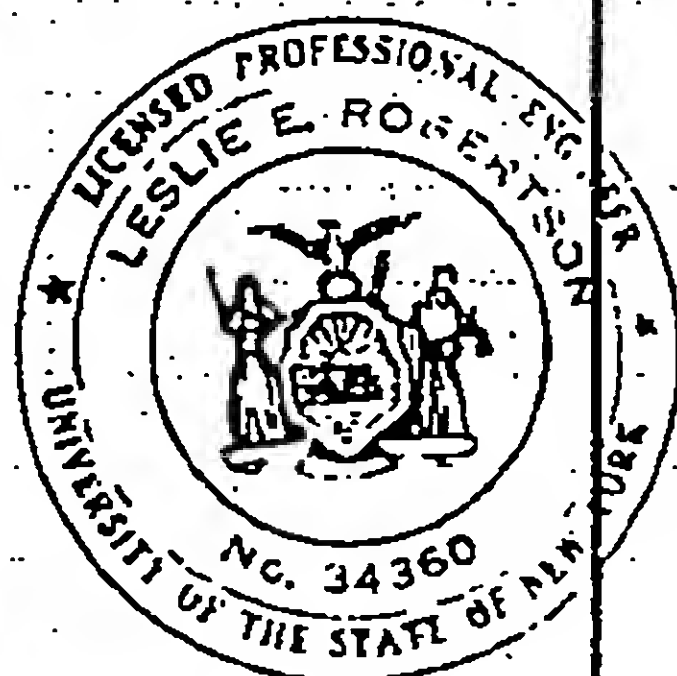
Note: Dimensions are shown to concrete faces, not to finished waterproofing.

Extend o.f. vert. bars to full height of wall where corner bars exist.

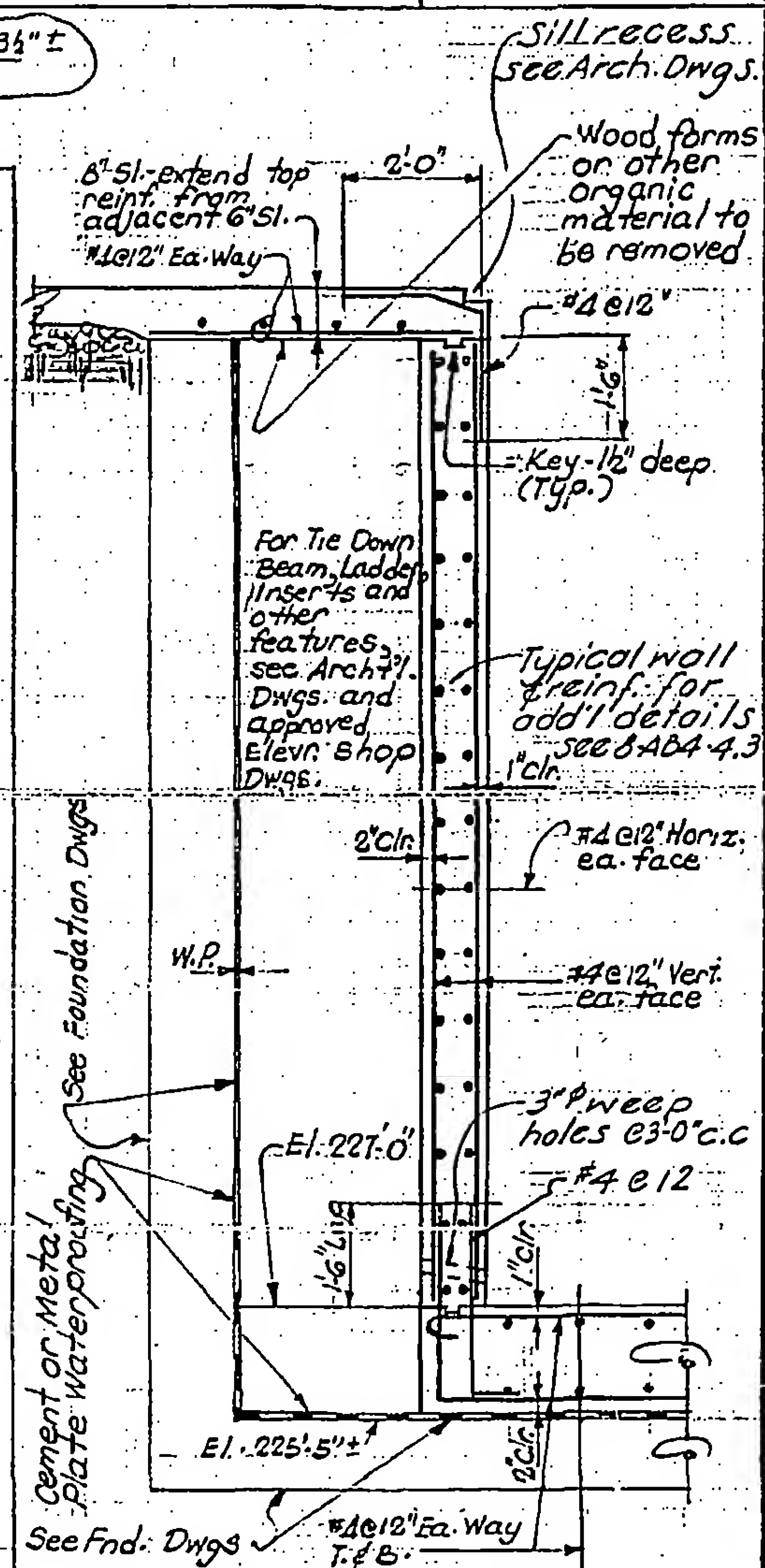
Sump pit
1'2" deep
For location
see Arch. Dwg's.

Detail A

8-A643.



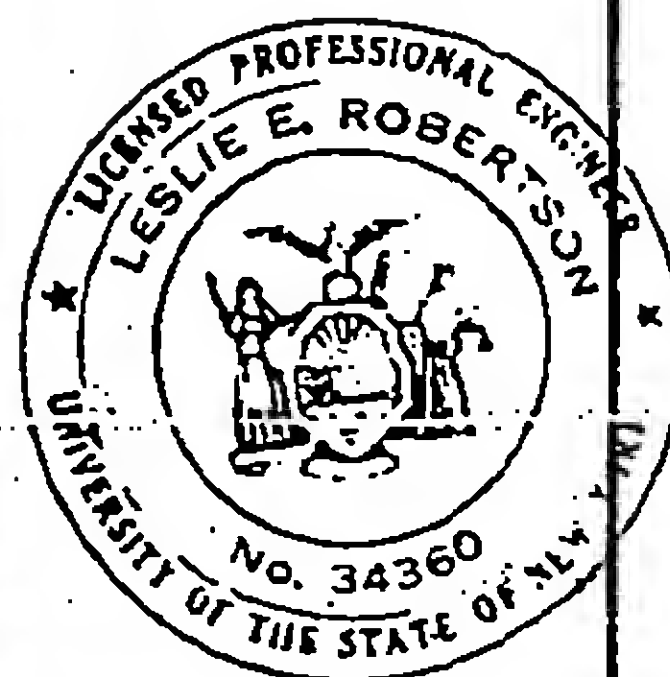
12-18-68



Detail A
Elevator Pit-Tower A

Section C-C

8-404-9.1



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PROJECT

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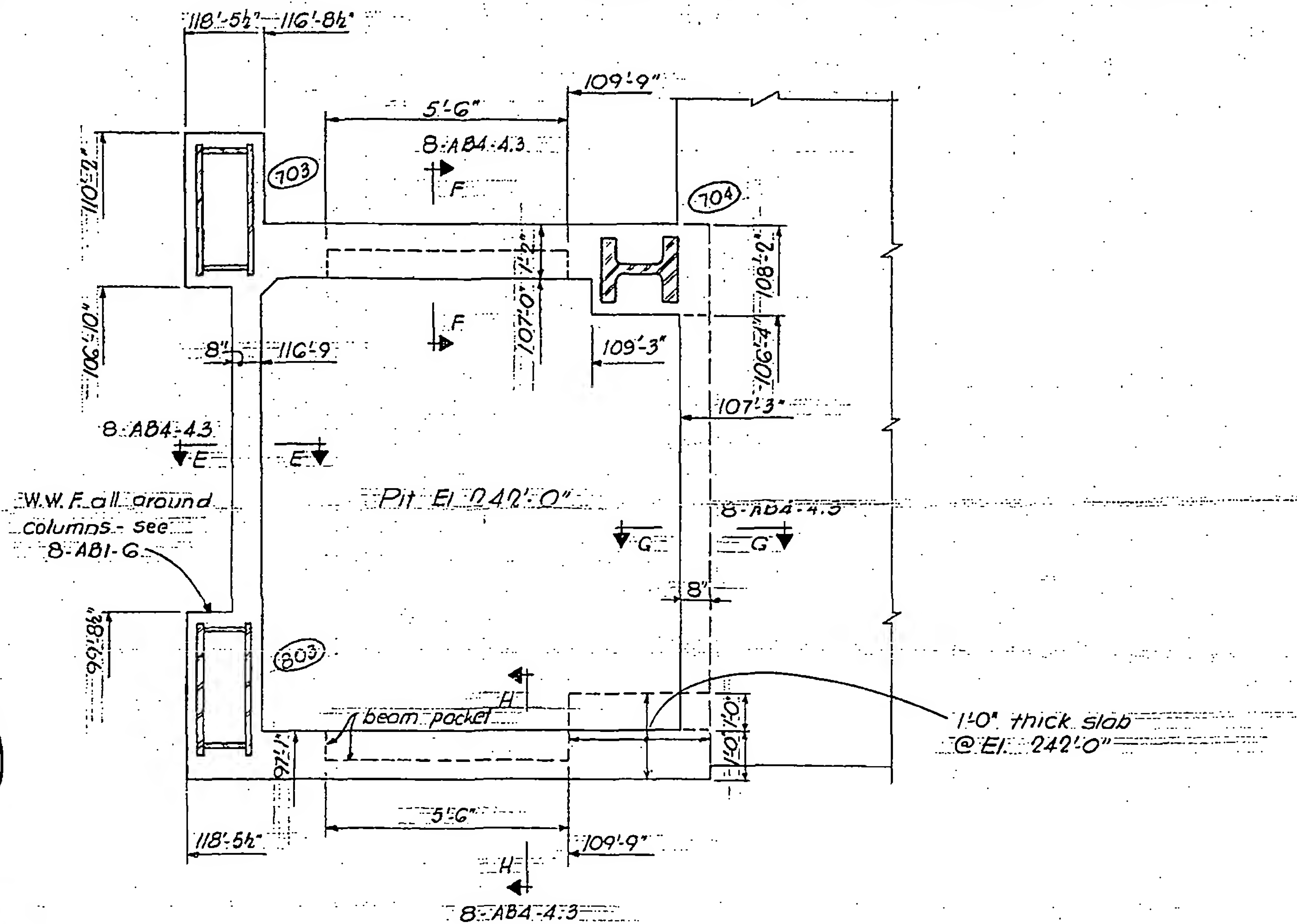
TITLE

TITLE SUB-LEVEL #5 - ELEVATOR PITS

DATE

DATE 5-7-68

REVISIONS



Elevator Pit - Tower B



Я-ДА-ДА-ДА

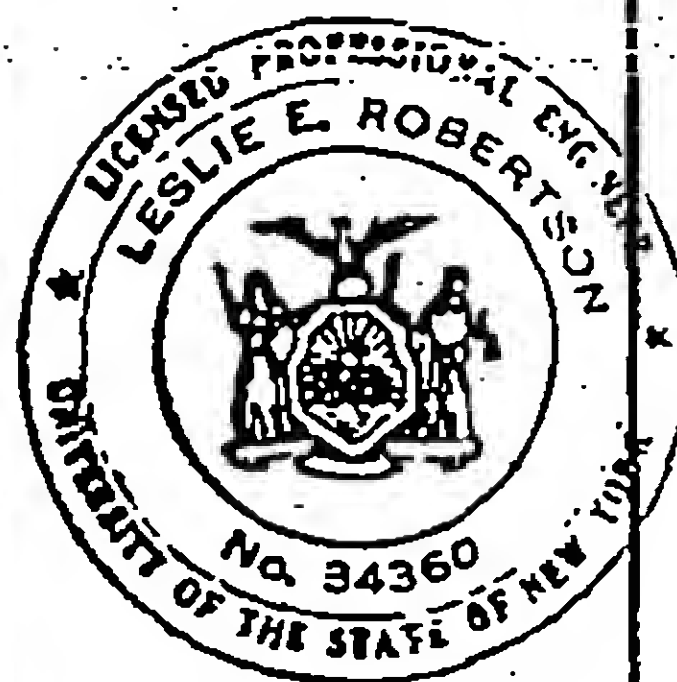
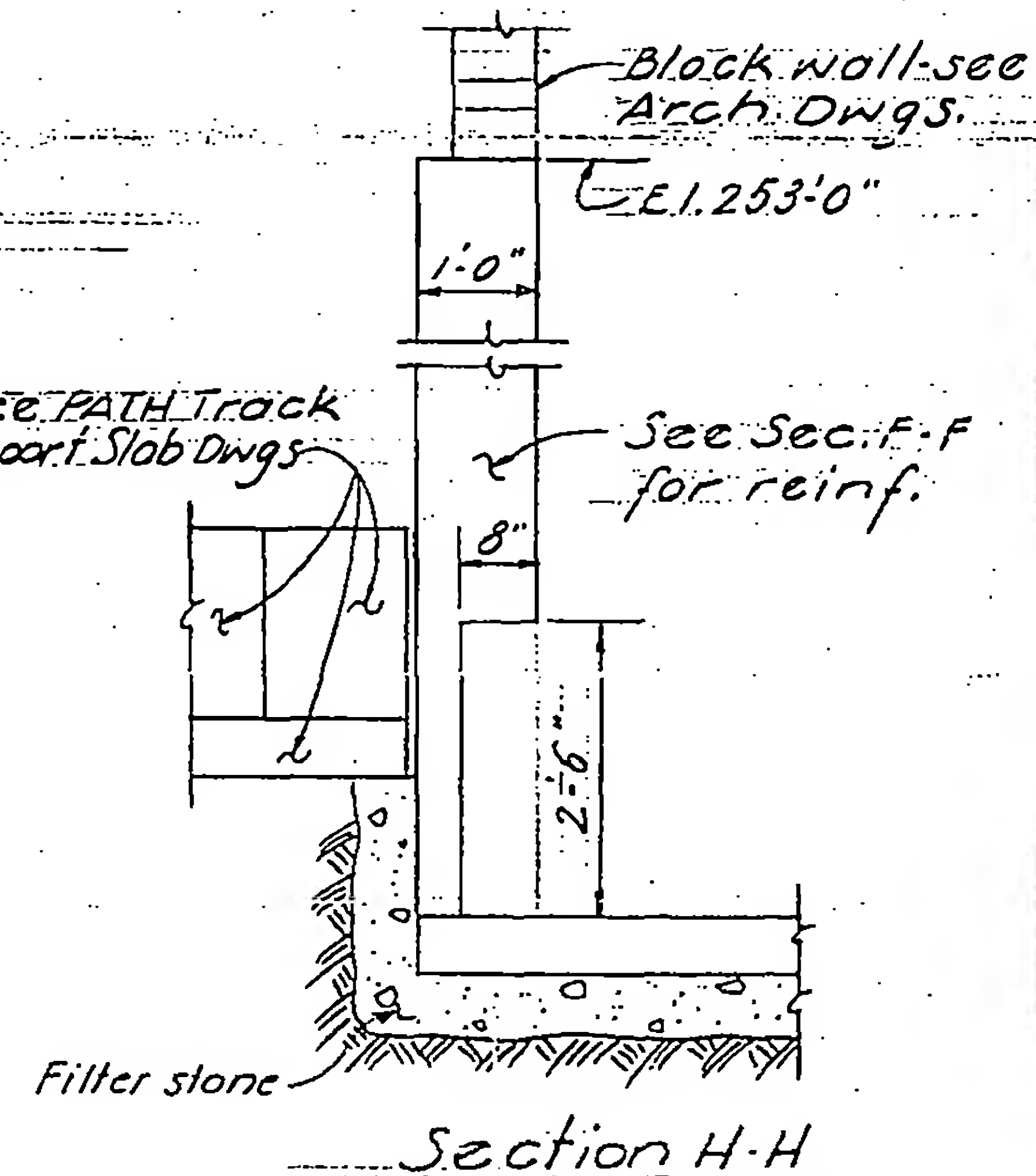
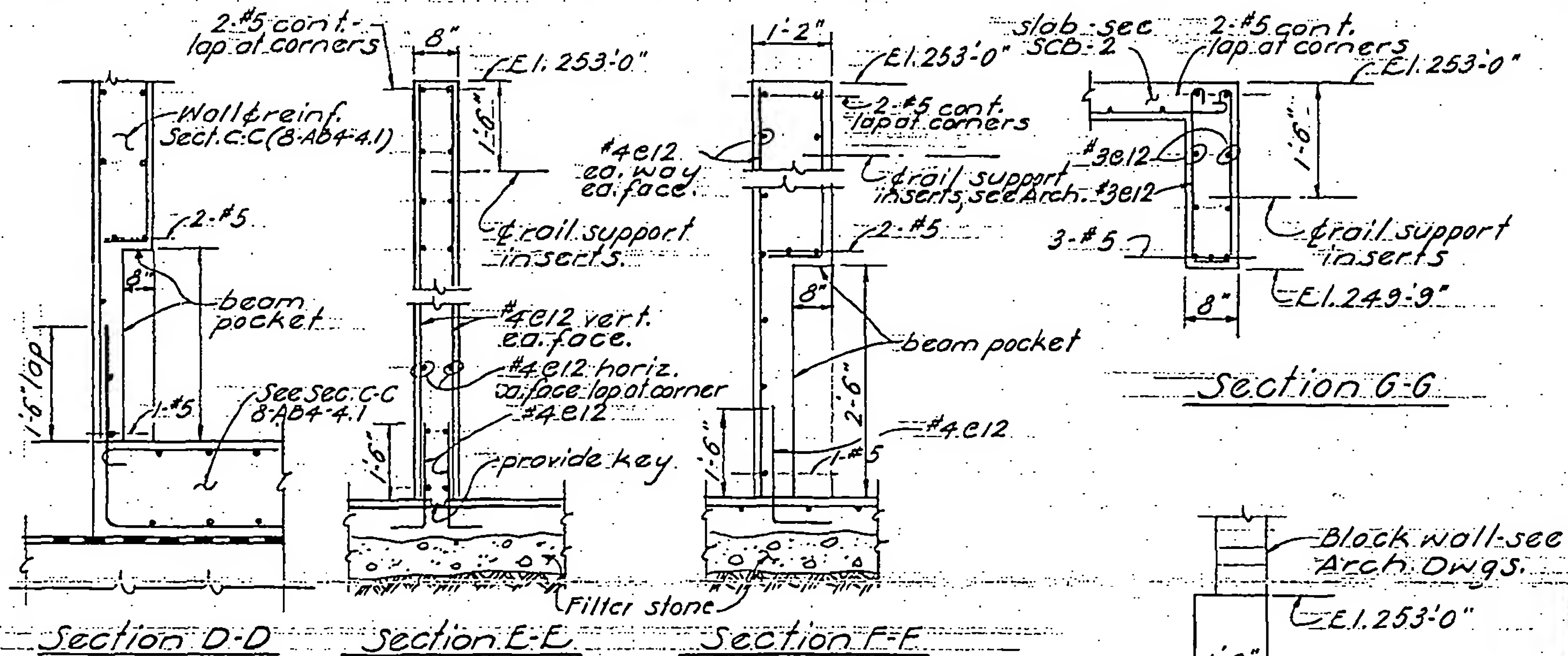
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TITLE SUB-LEVEL #5 - ELEVATOR PITS

DATE 5-1-68

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8-AB4-4.3

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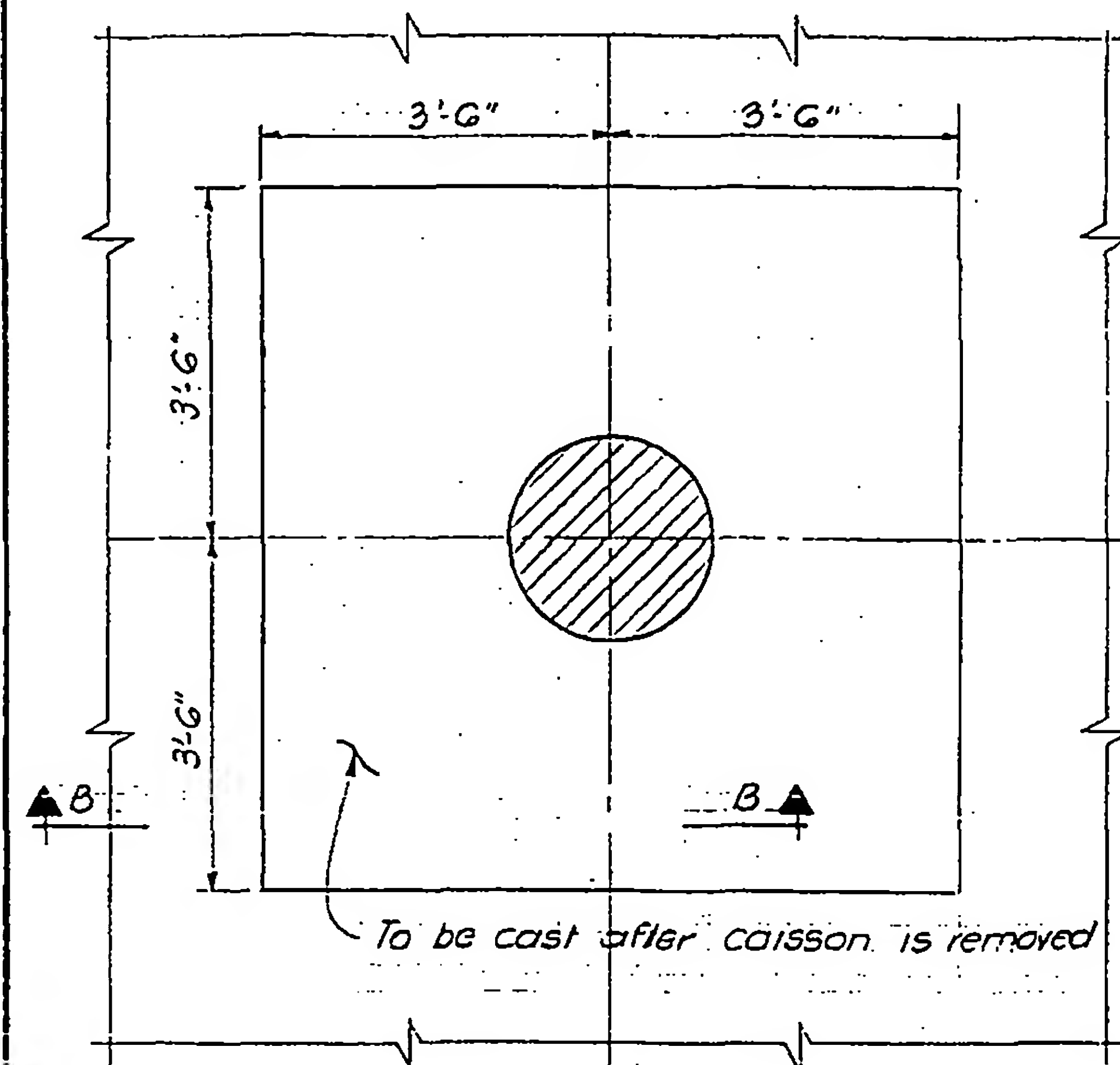
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

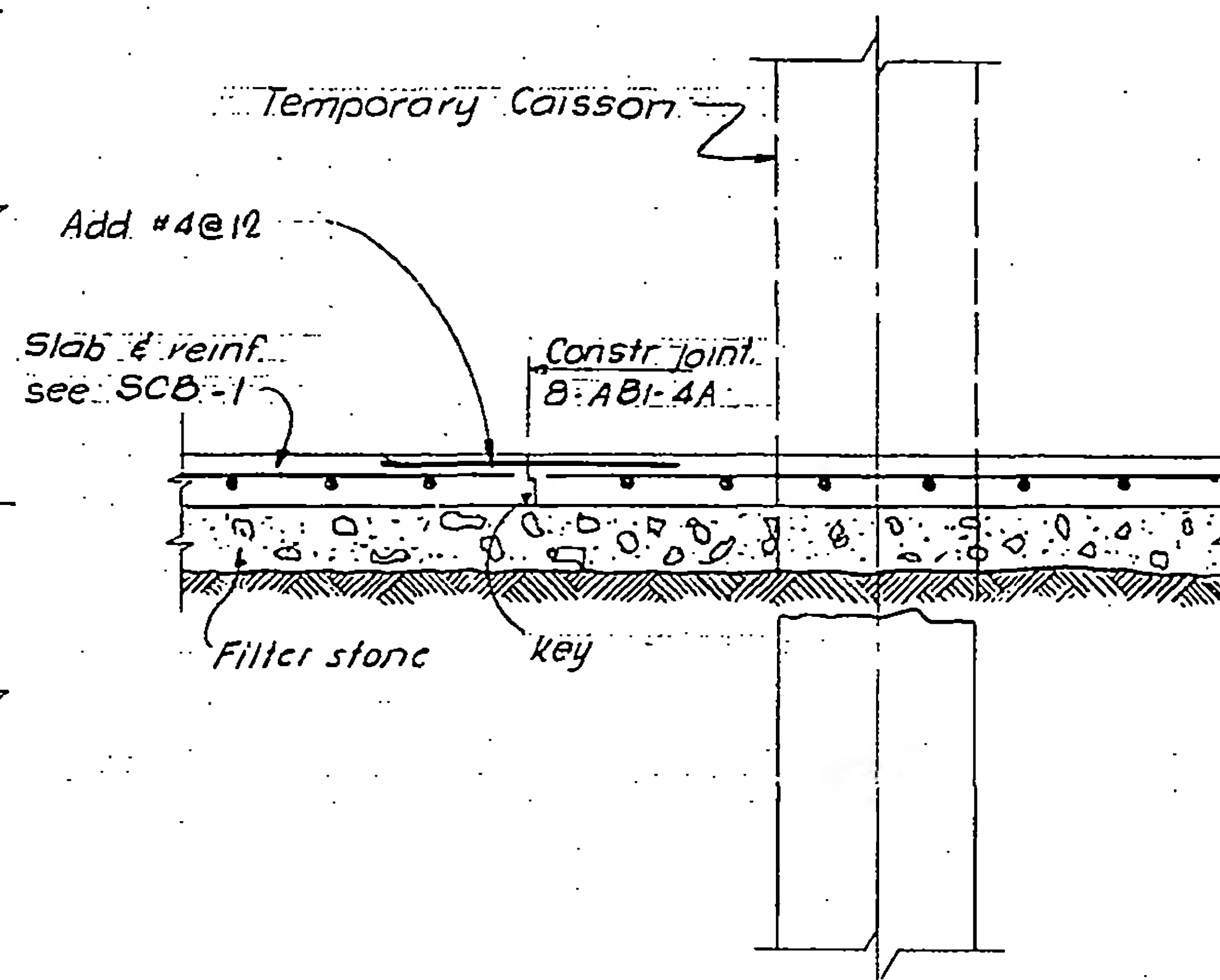
TITLE SUB-LEVEL #5 - DETAILS AT CAISSONS

DATE 5-1-68

REVISIONS

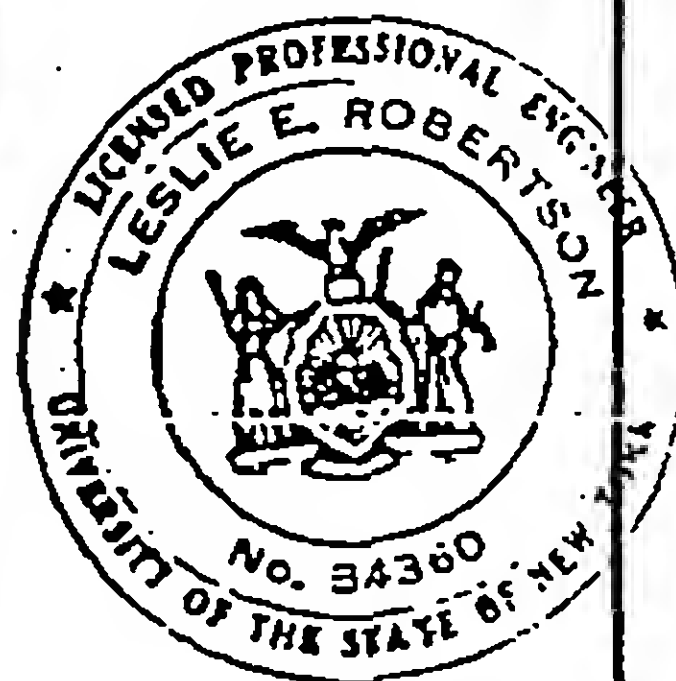


Typical Plan - for variations see SCB-1



Detail A

Section B-B



8-AB4-5

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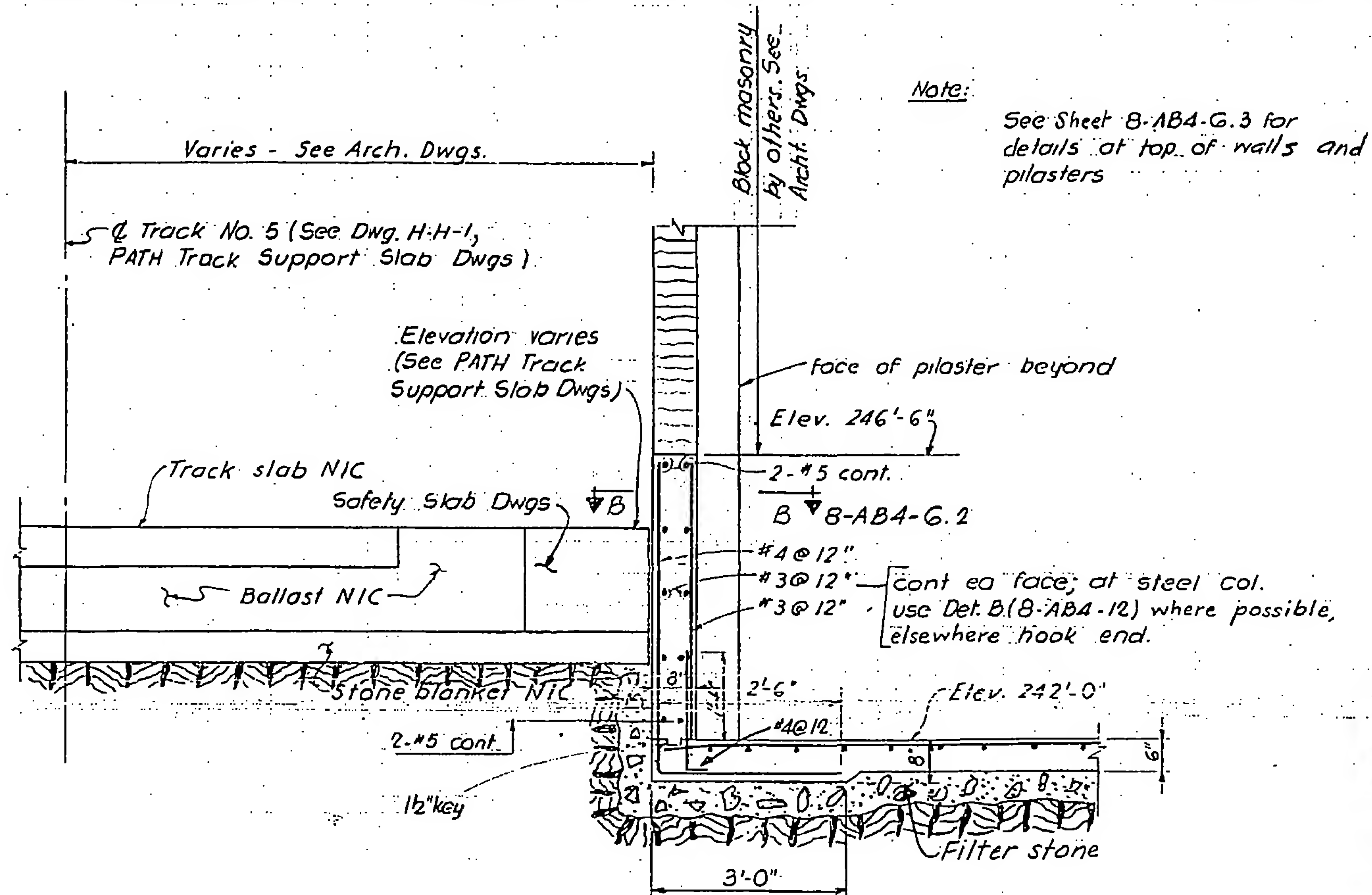
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAILS AT PATH TRACKS

DATE 5-1-68

REVISIONS

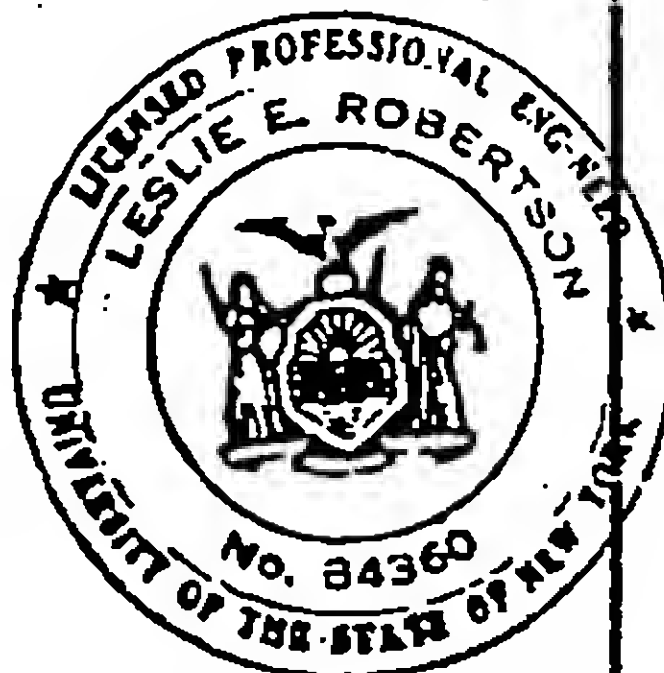


Section A-A
(typical)

See Dwg 8-AB4-G.2 for details at pilasters

DETAIL AT PILASTER WALLS - TOWER B

8-AB4-G.1



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TITLE SUB-LEVEL #5 - DETAILS AT PATH TRACKS

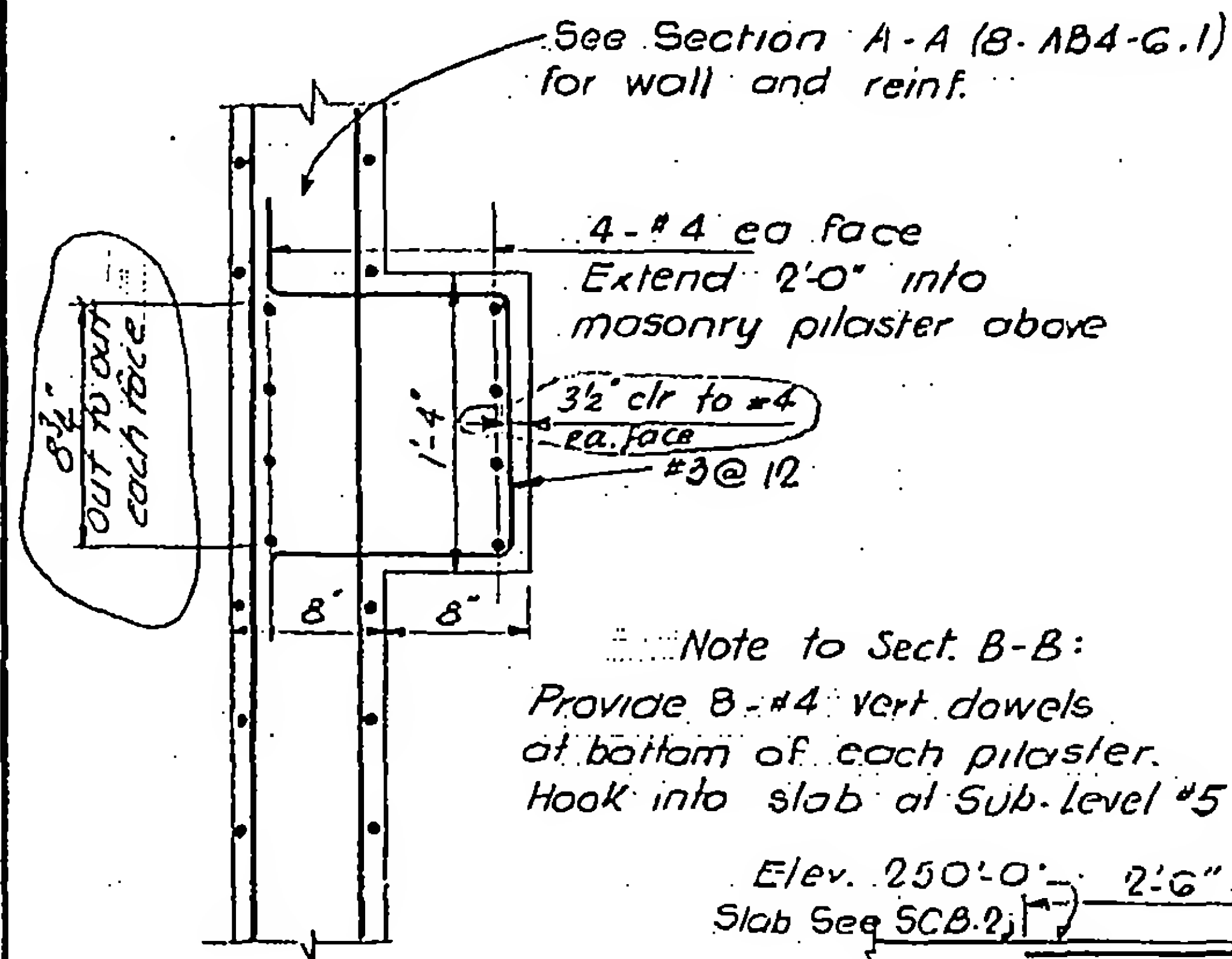
DATE 5-1-68

REVISIONS

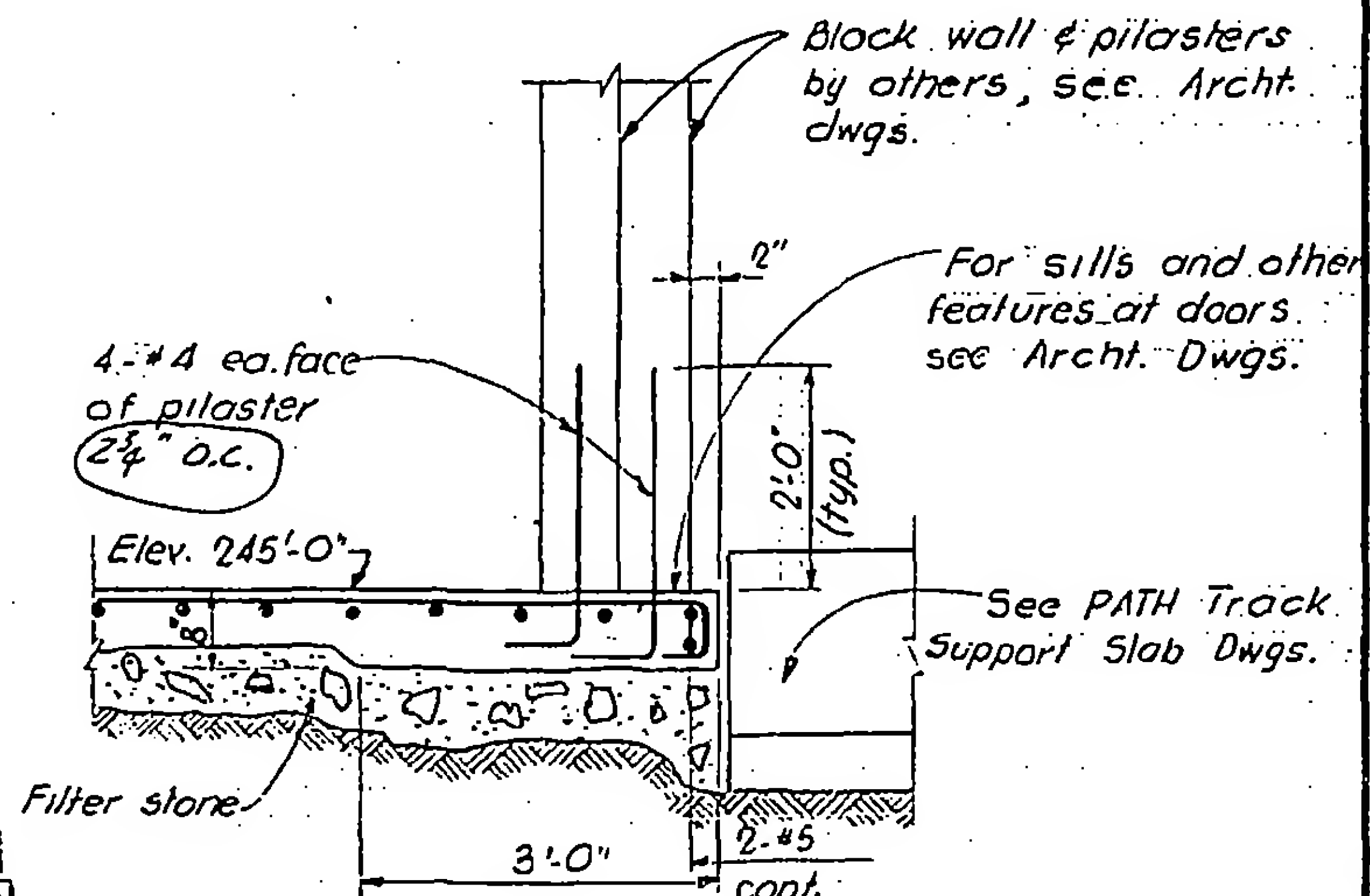
4-11-69

5-9-69

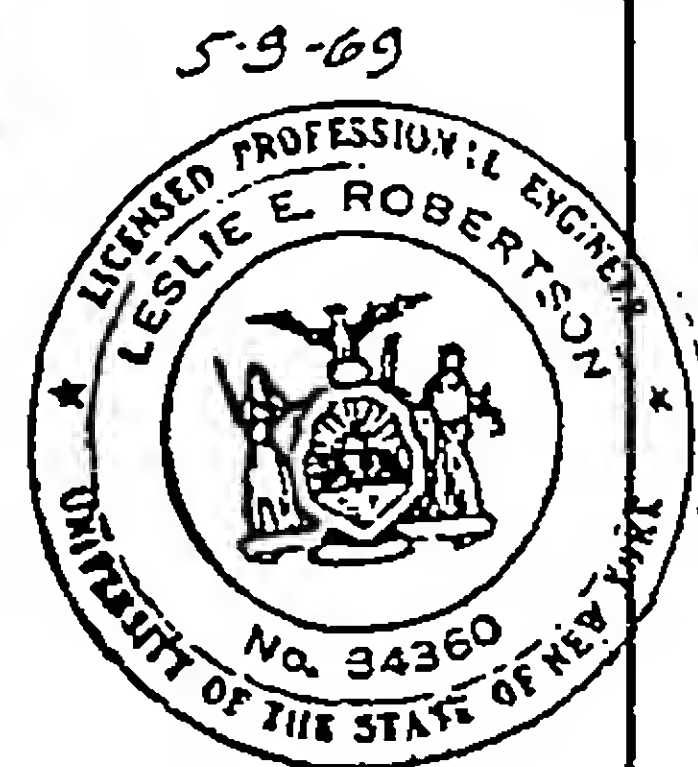
For concrete caps over pilasters see 8-AB4-GE,F.



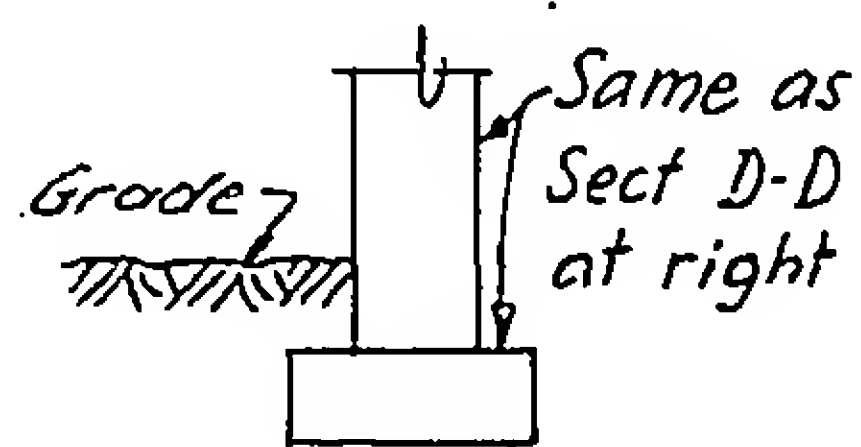
Section B-B



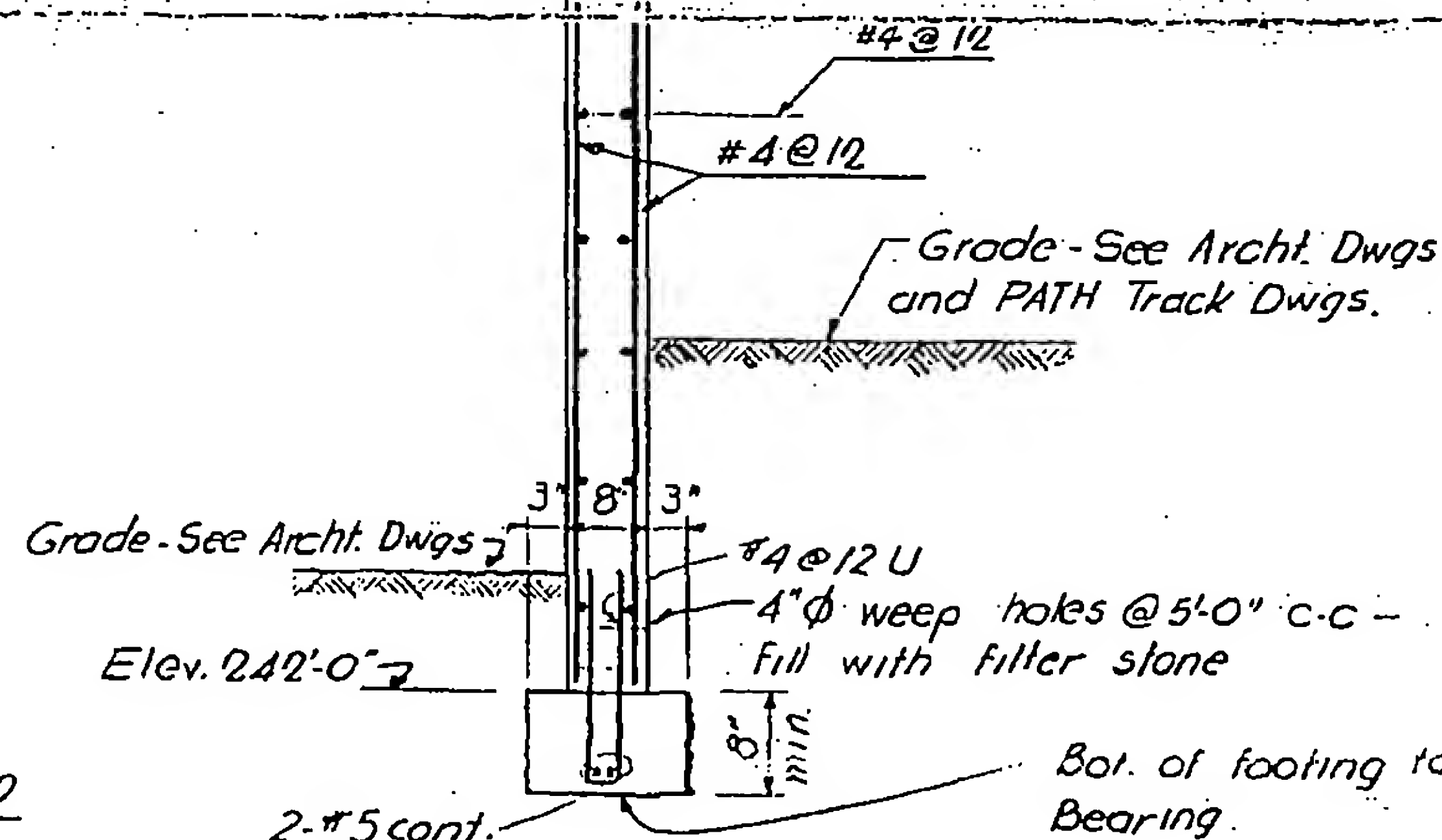
Section C-C



Drain below footing
(no weep holes reqd)



Alternate Section D-D
To be used where
ordered by Engineer

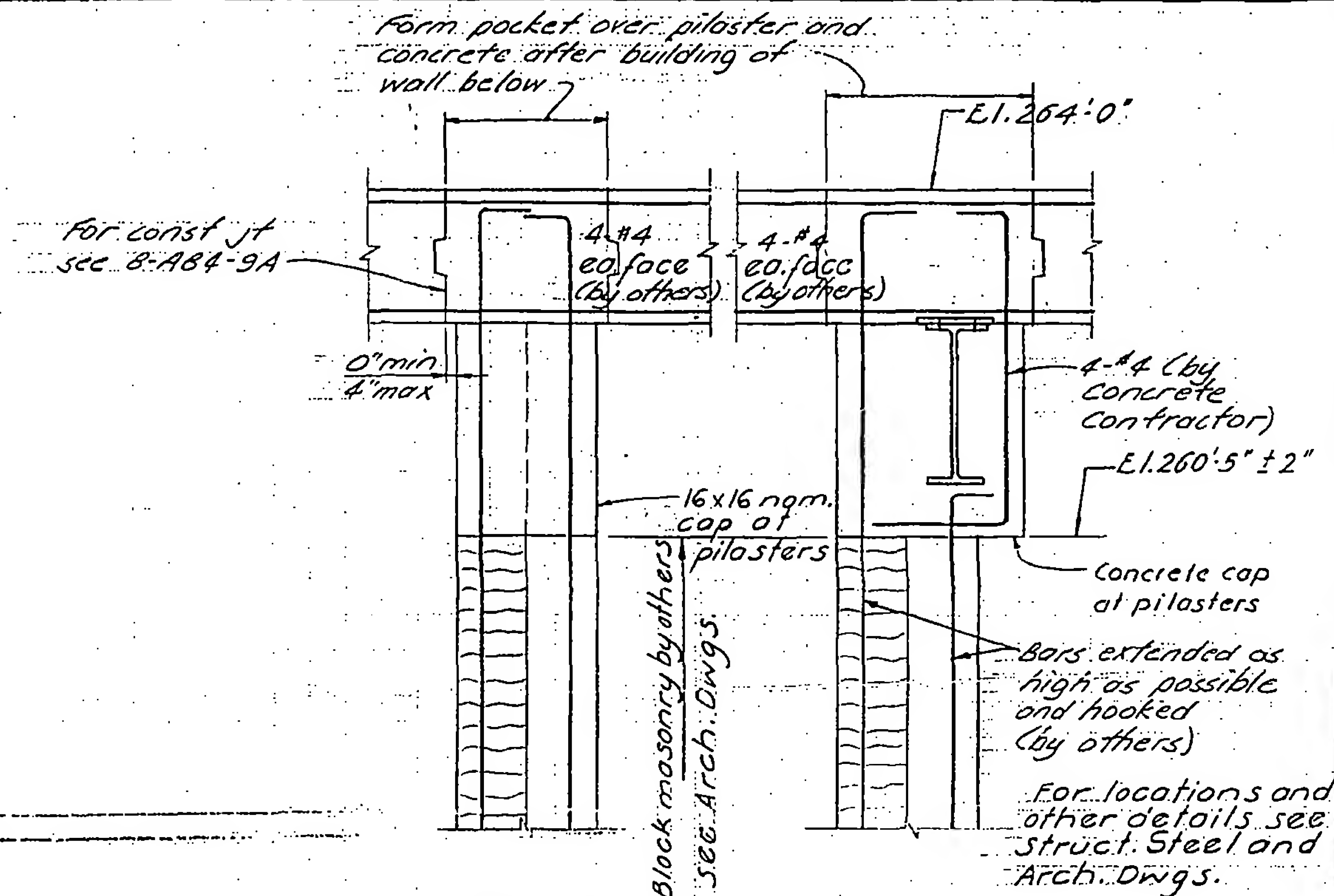


Section D-D
(See Alternate this sheet)

8-AB4-G.2

REVISIONS

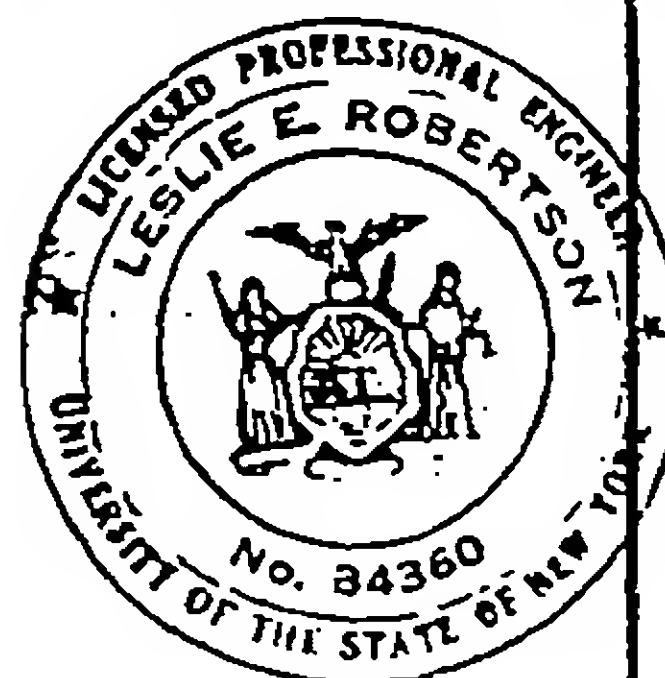
GENERAL REVISION
 5-9-69



Pilaster
 No interference.
Detail E

Pilaster
 Steel beam or beams interfere; positions vary.
 For cases of interference not covered by this detail, contractor to submit details to the Engineer for approval.
Detail F

DETAILS AT TOP OF PILASTERS



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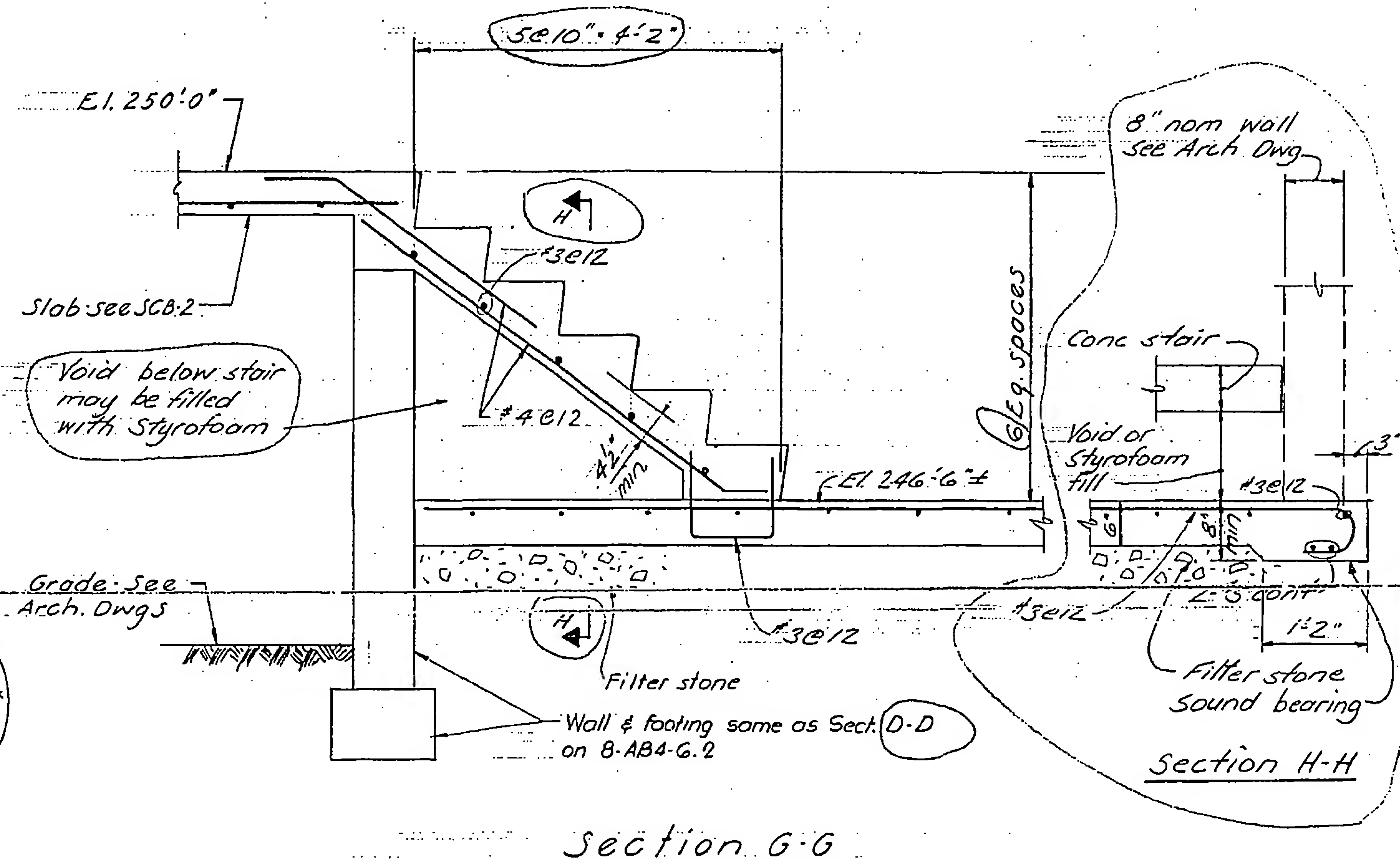
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TITLE DETAILS AT PATH TRACKS

DATE 5-1-68

REVISIONS

4-11-69



8-AB4-6.4

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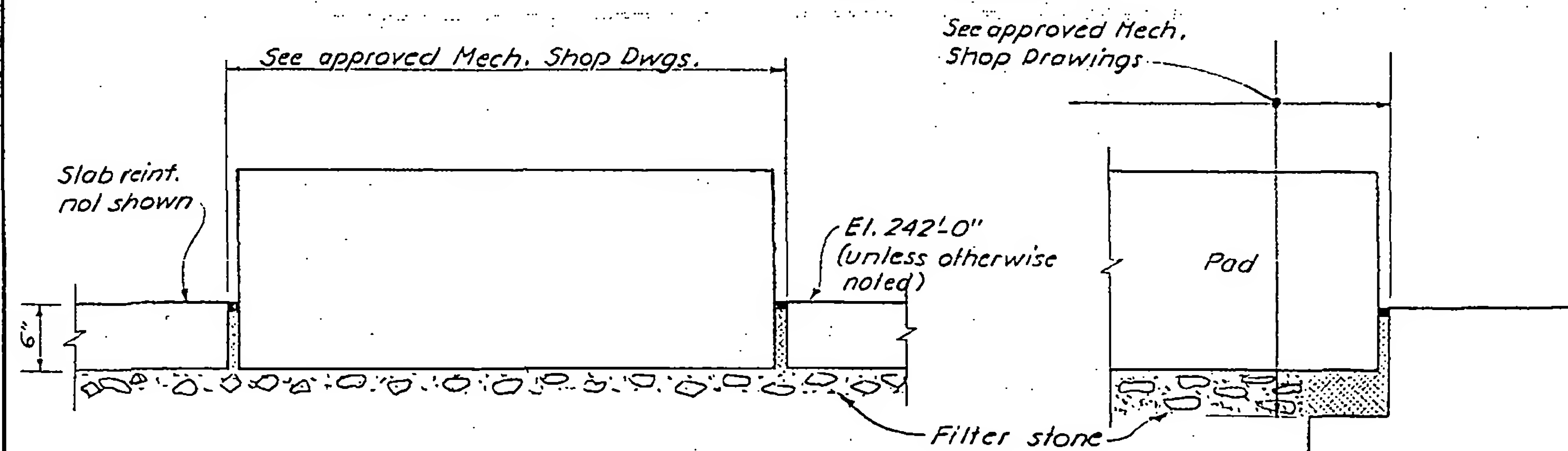
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TITLE CONCRETE PADS ON GRADE

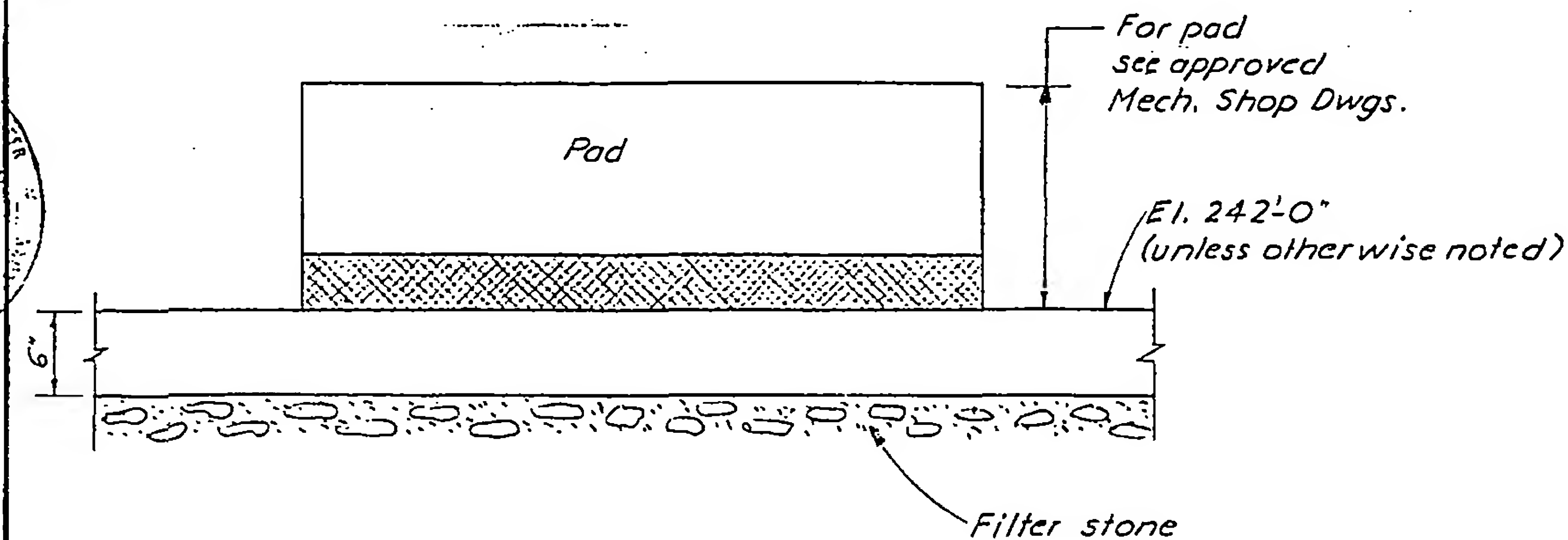
DATE 5-1-68

REVISIONS

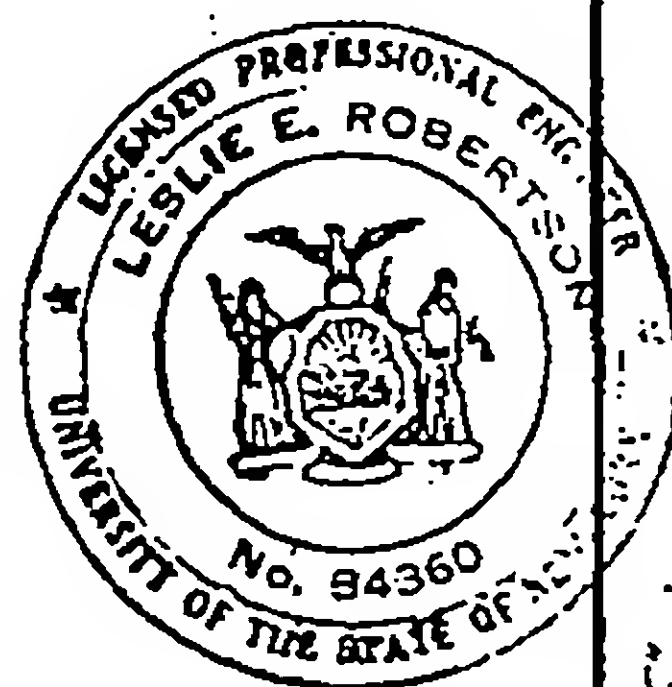


Typical Pad Section A-A

Detail C



Section B-B



8-AB4-7

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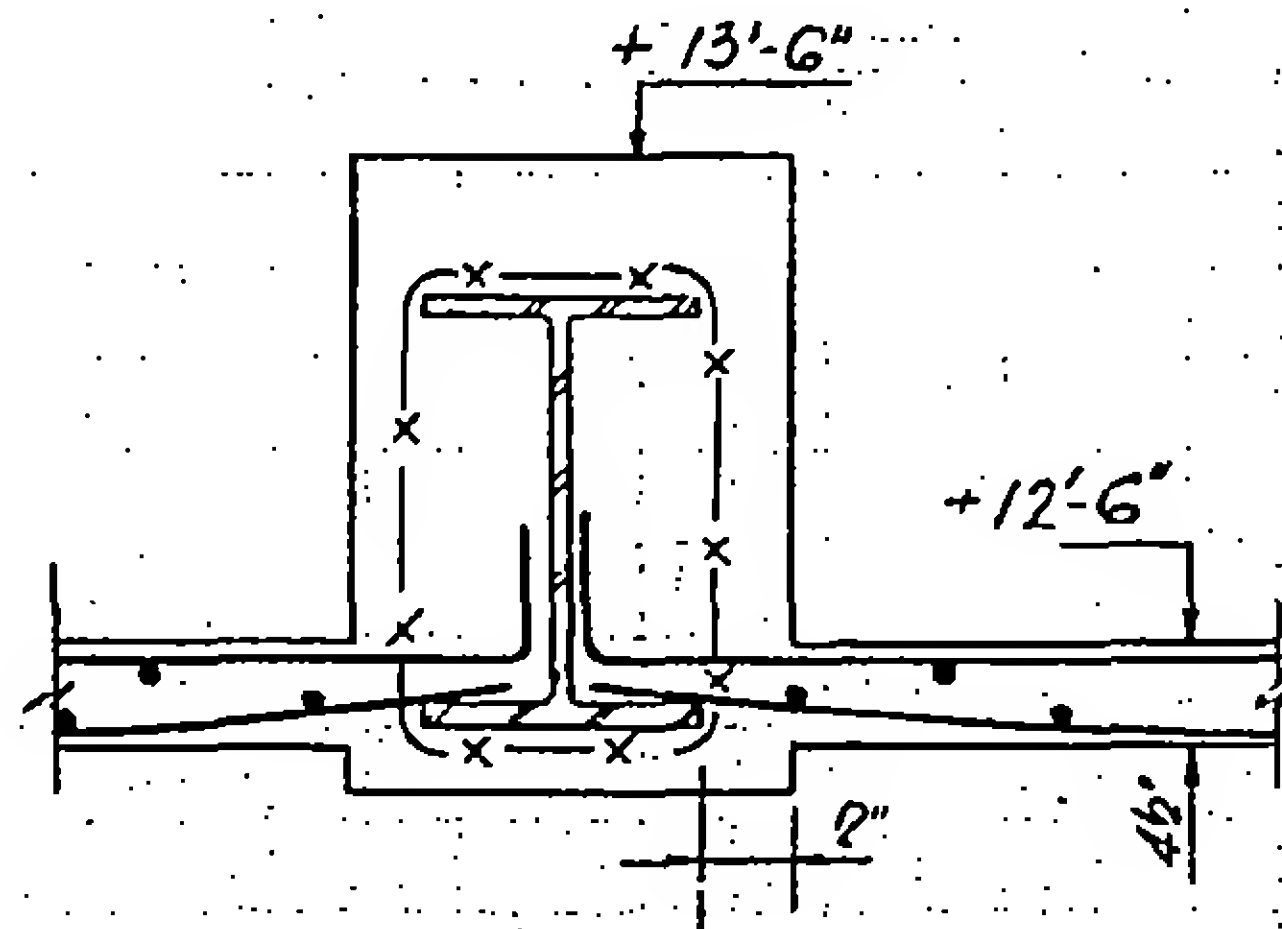
Structural & Civil Engineers

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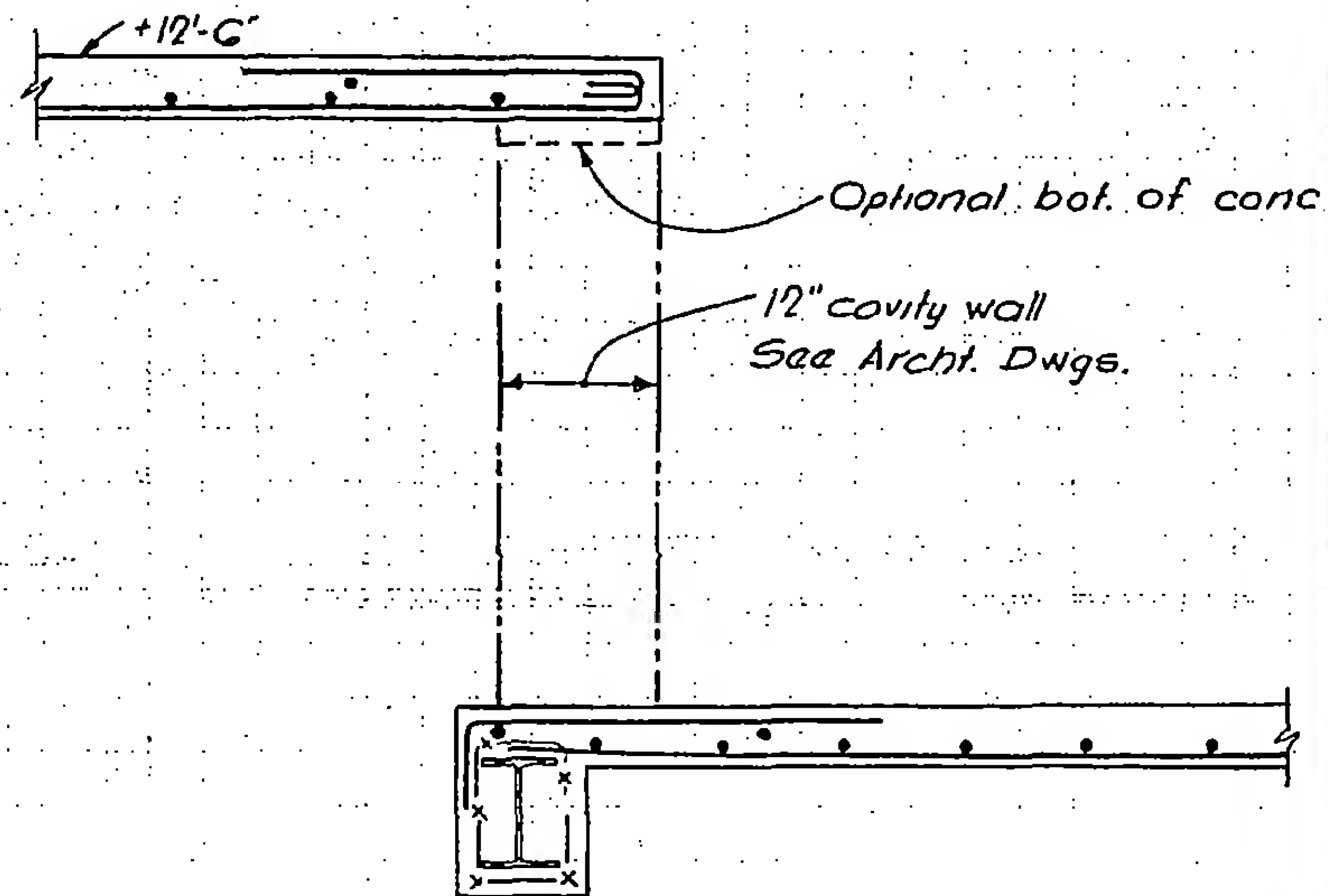
TITLE SECTIONS AT SUBLEVEL #4

DATE 5-1-68

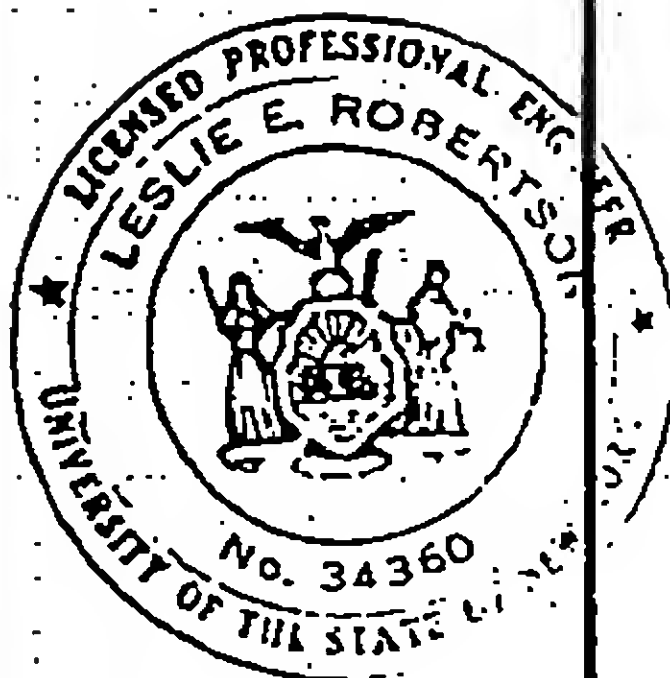
REVISIONS



Section A-A

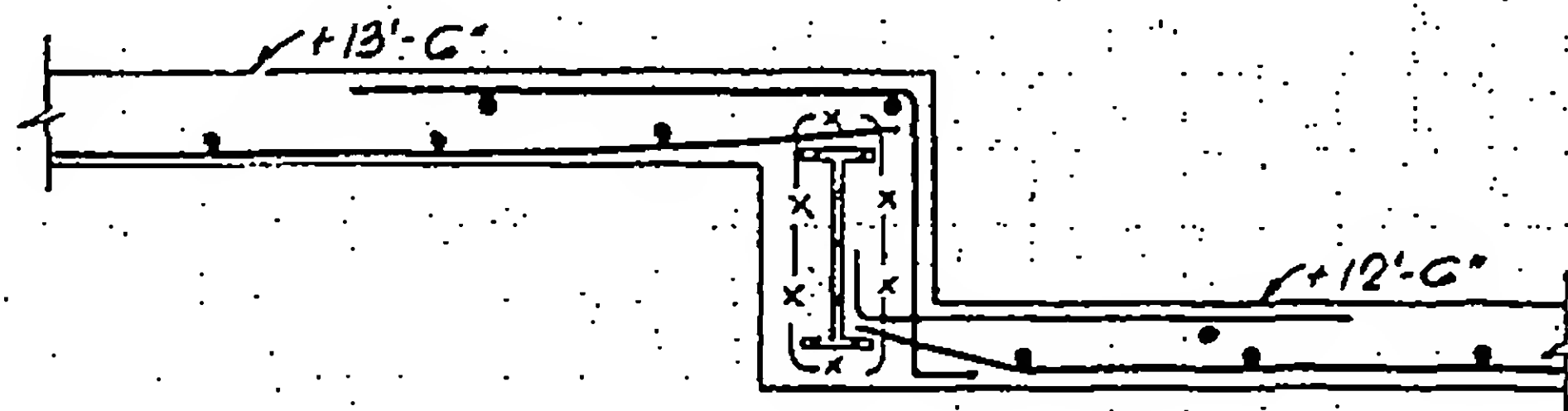


Section B-B

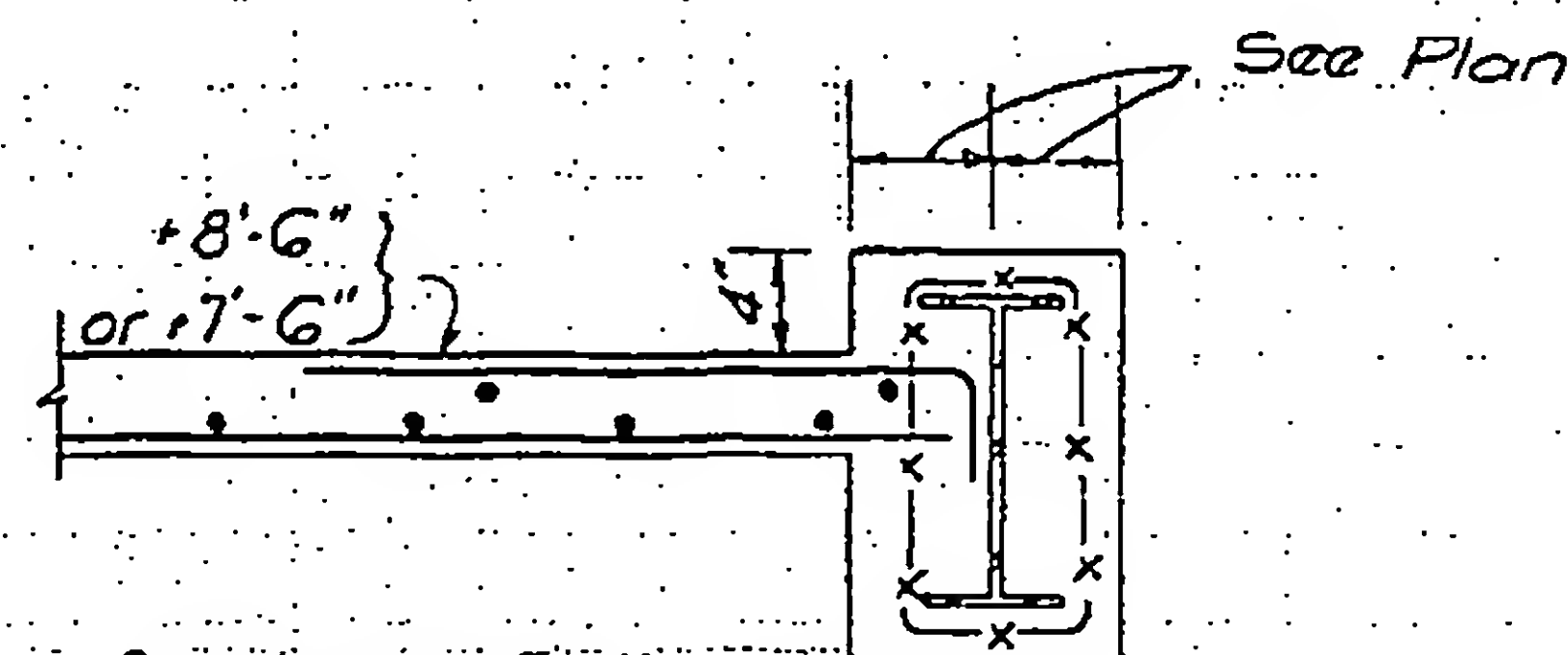
Note:For insulation at soffit of slab see
Archt. Dwgs. & Spec.

8-AB4-8.1

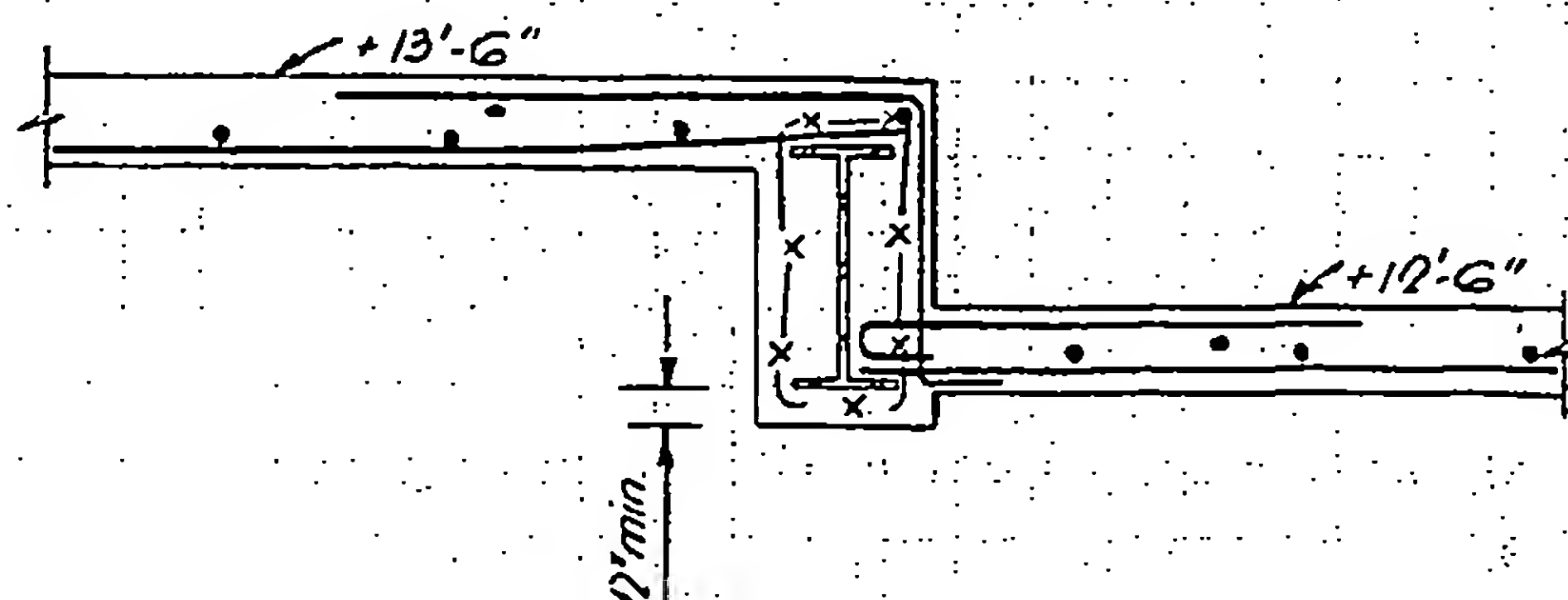
REVISIONS



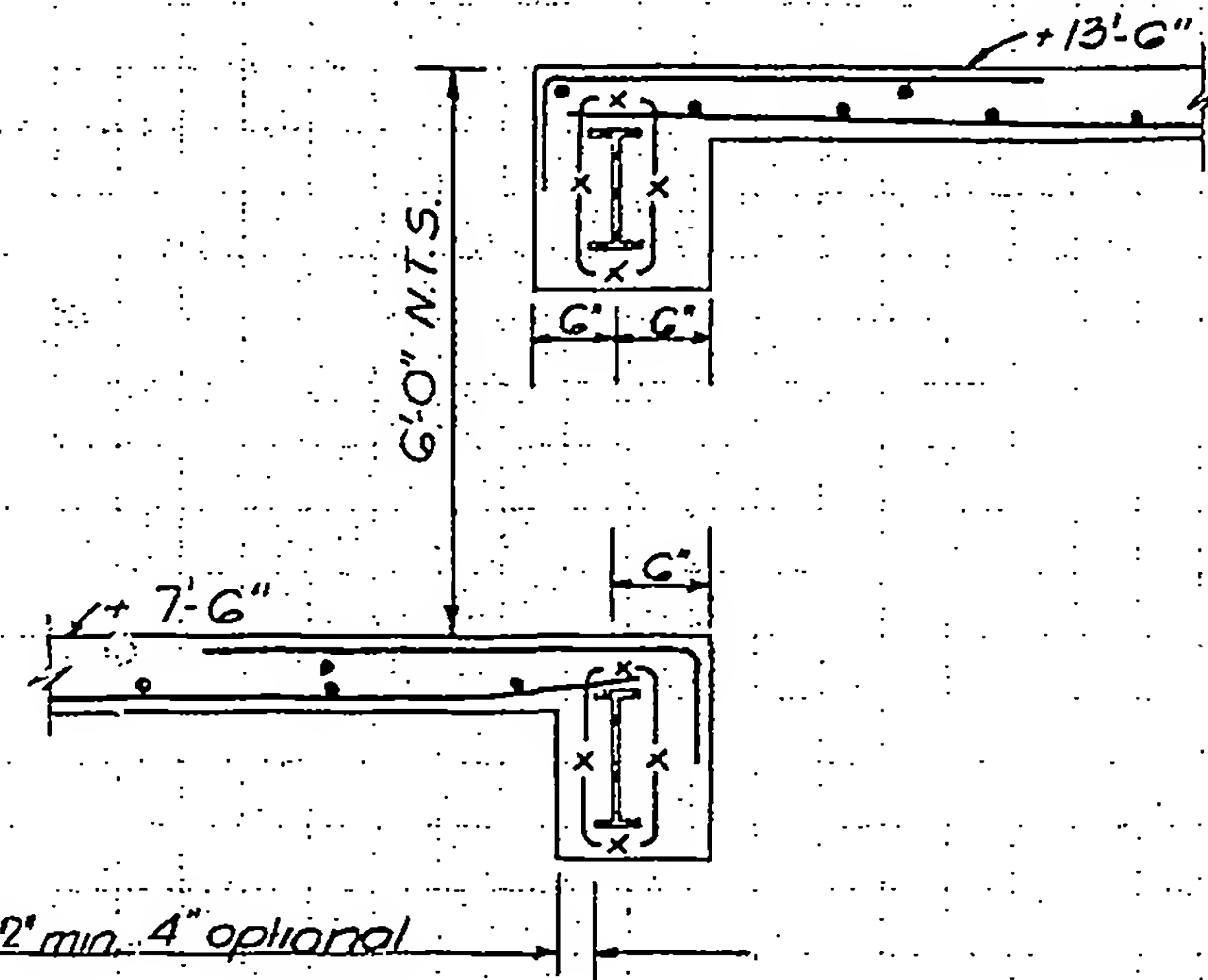
Section C-C



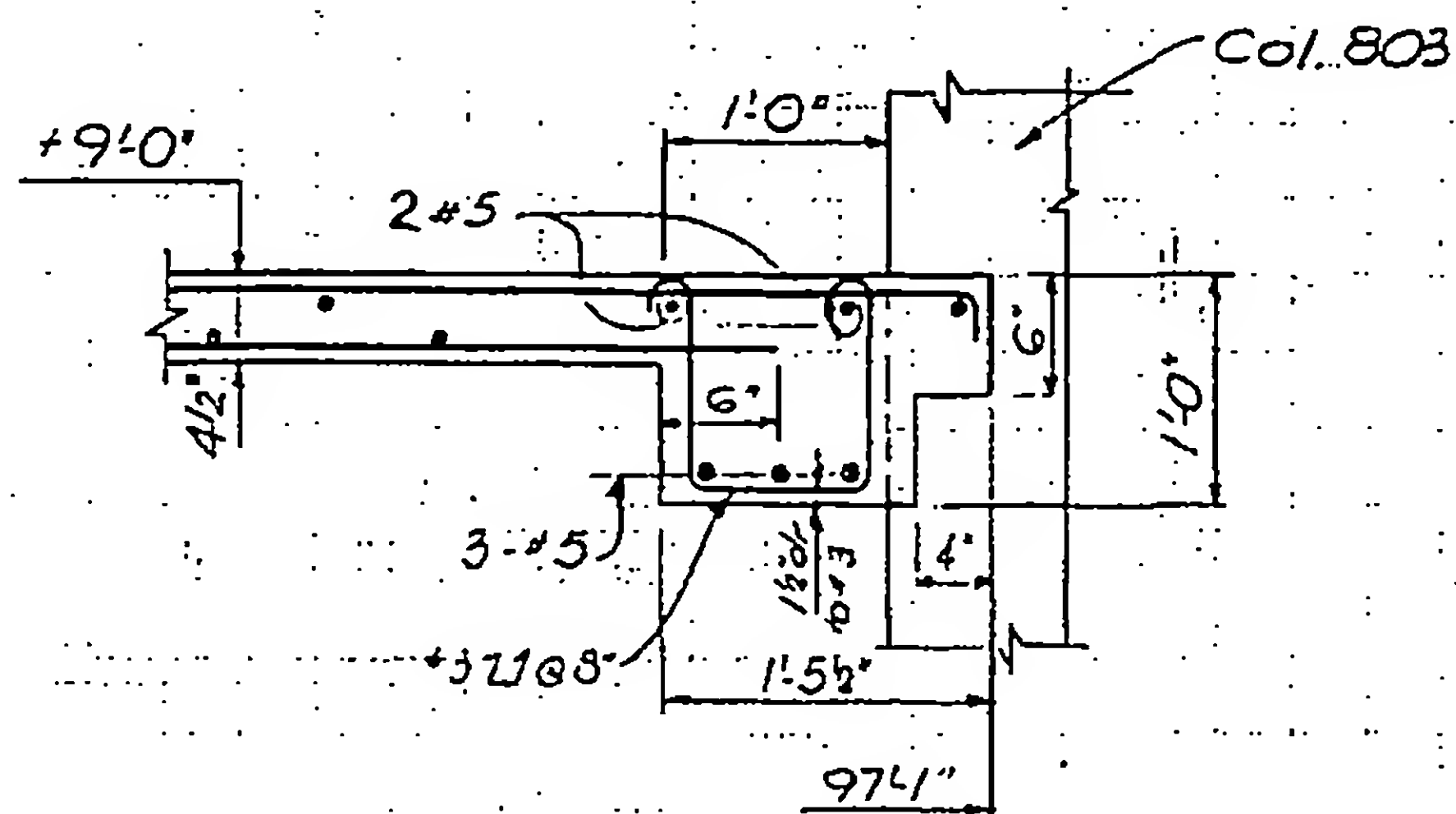
Section E-E



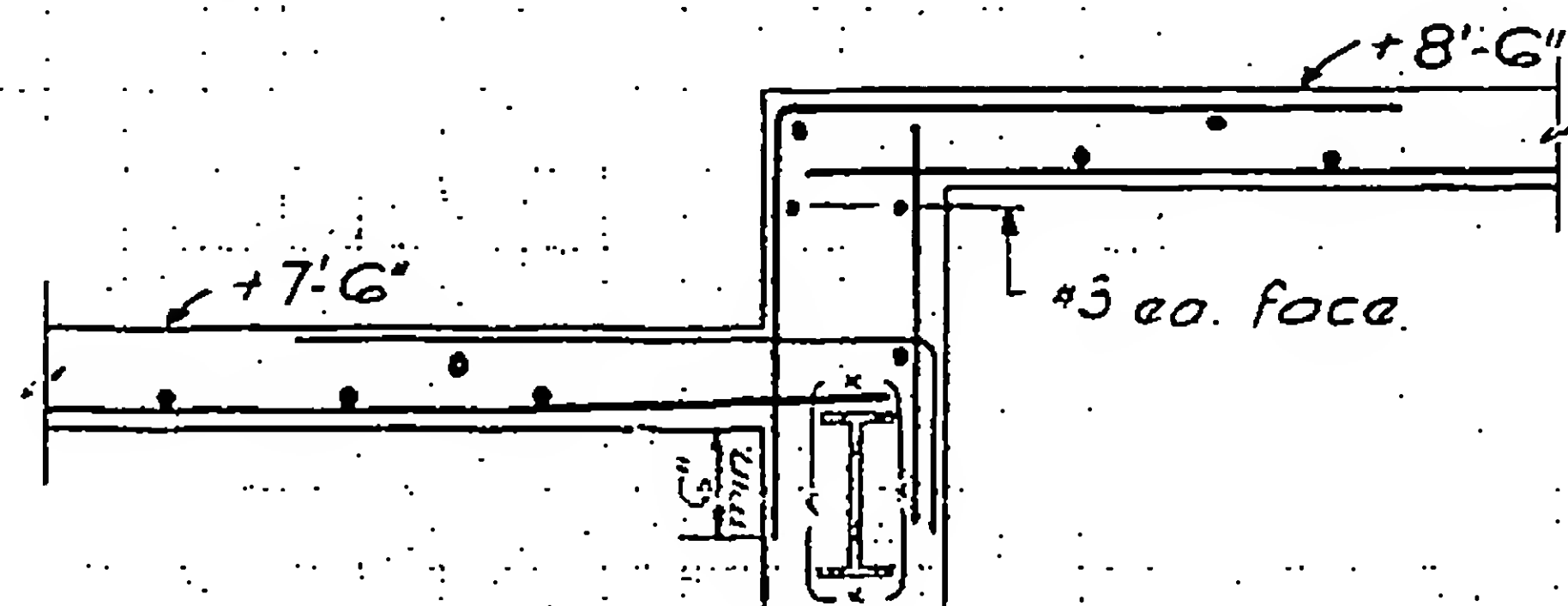
Section D-D



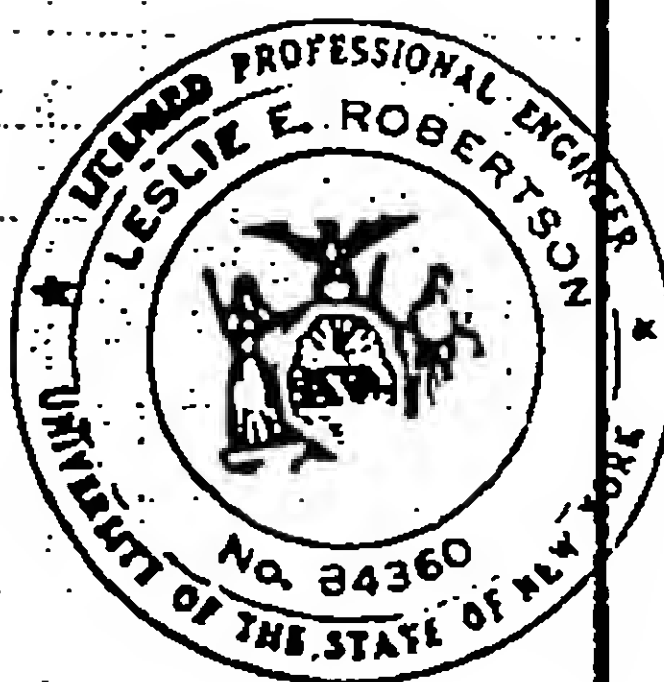
Section F-F



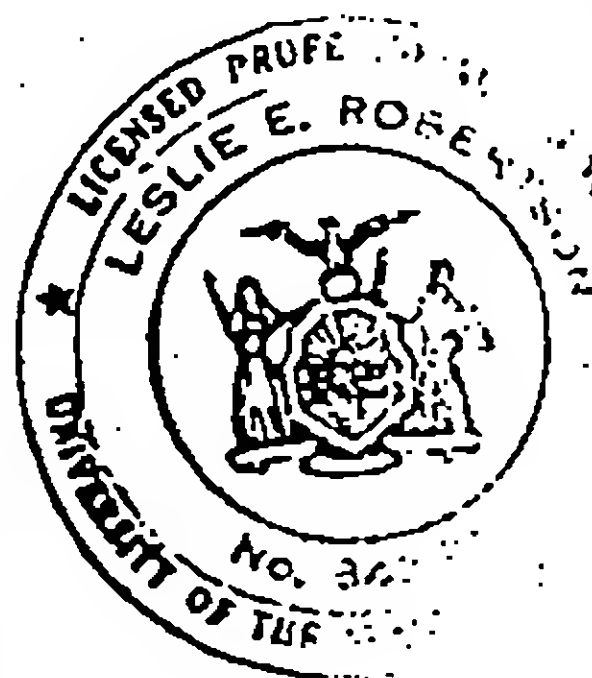
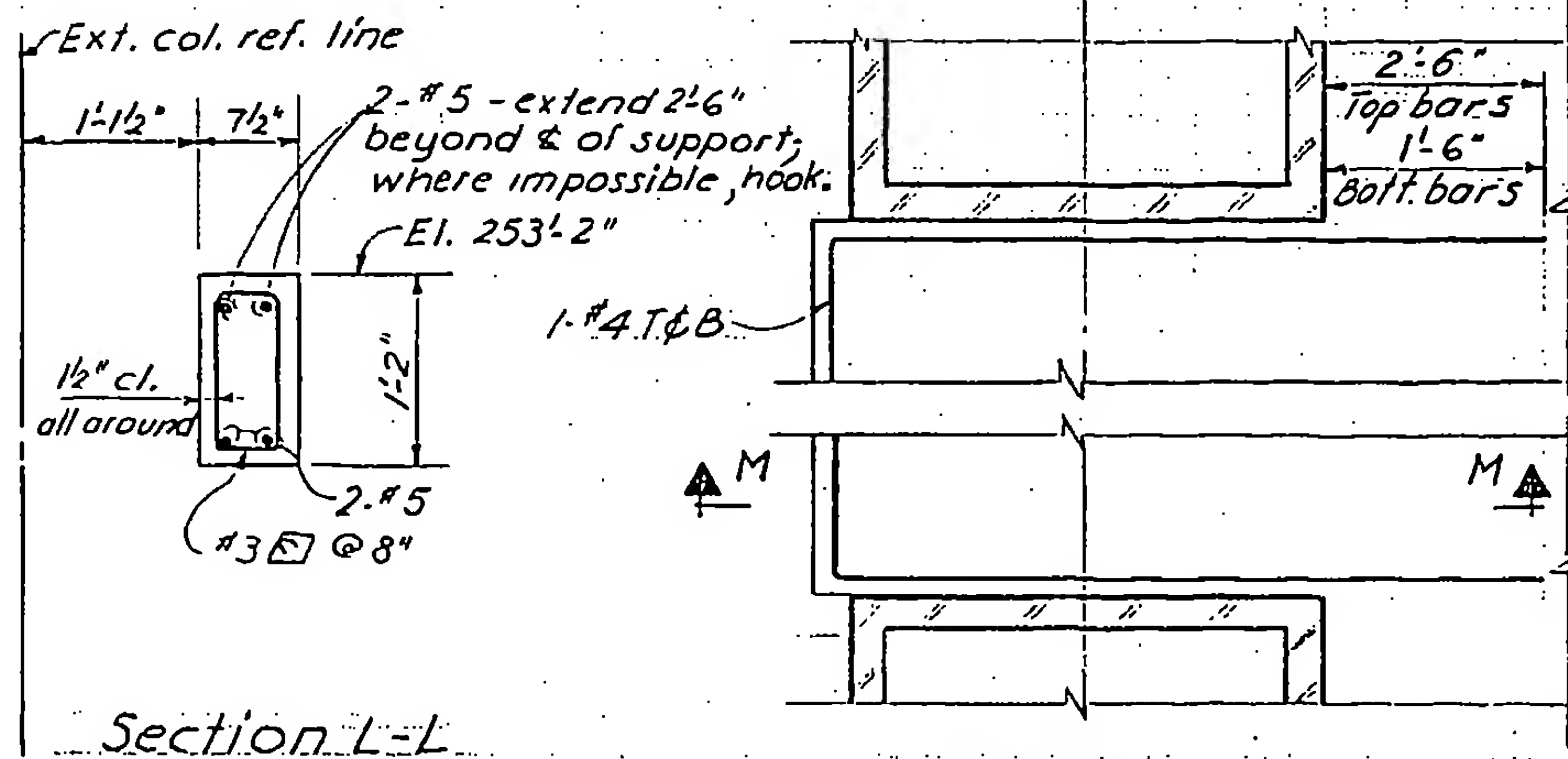
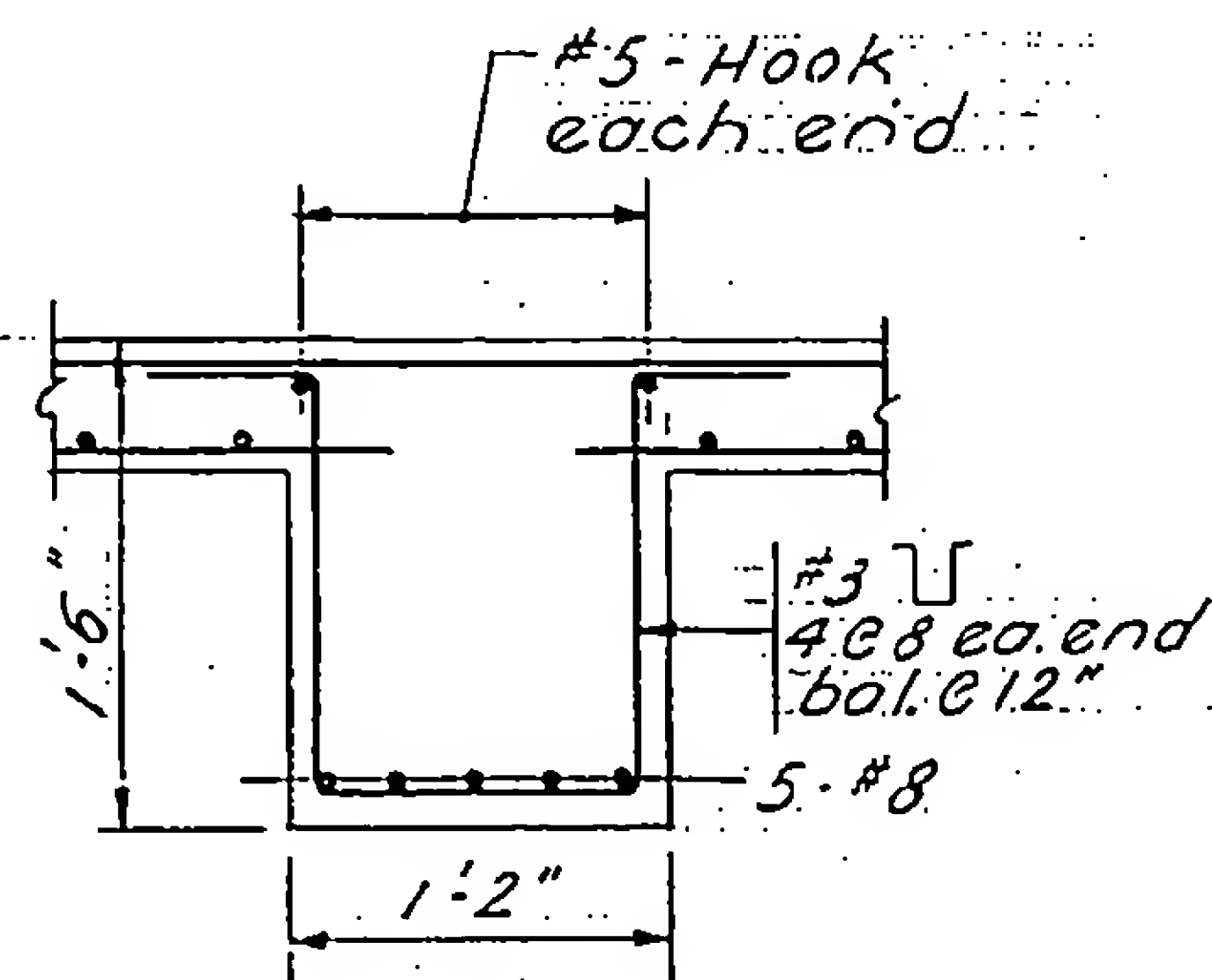
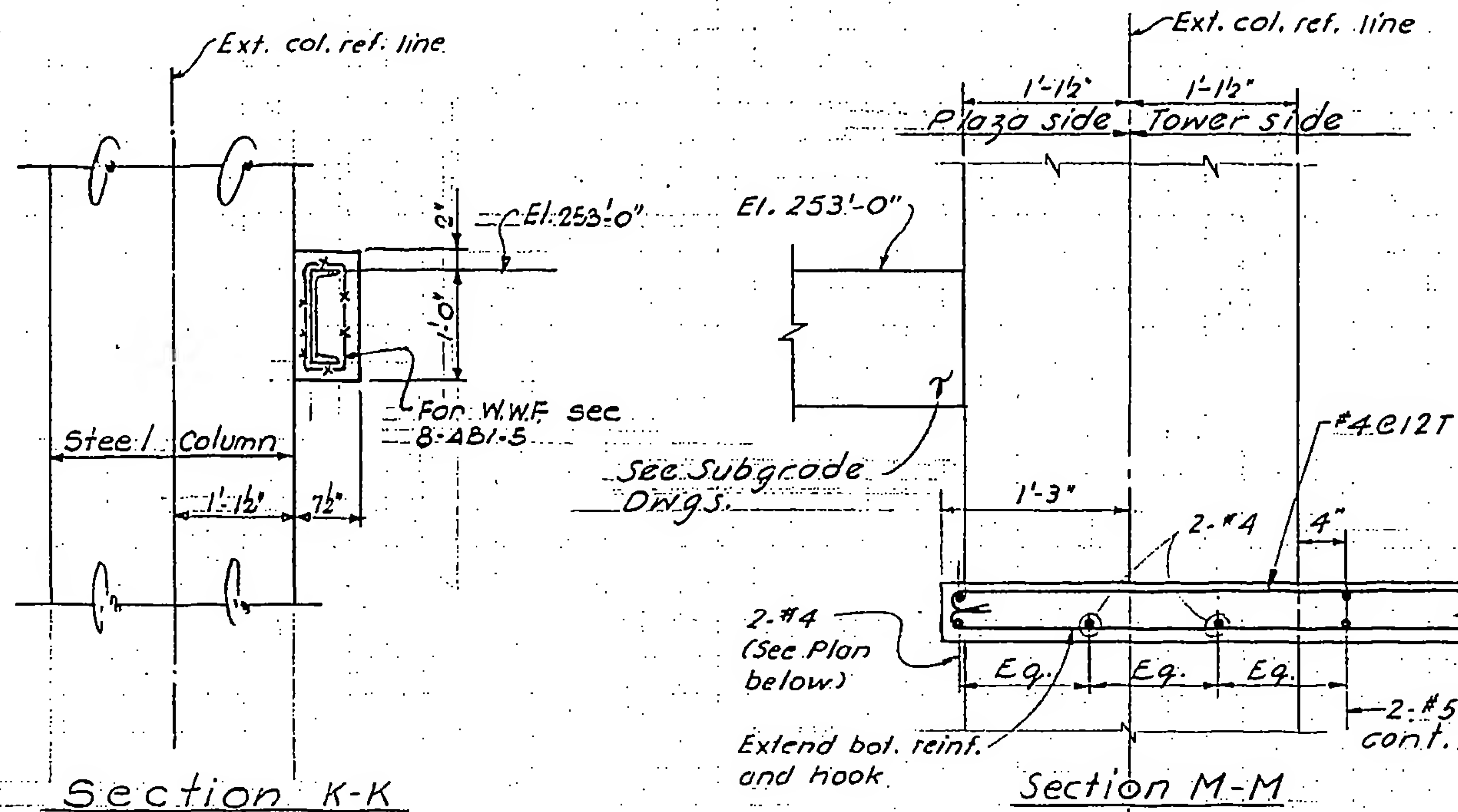
Section H-H



Section G-G



REVISIONS



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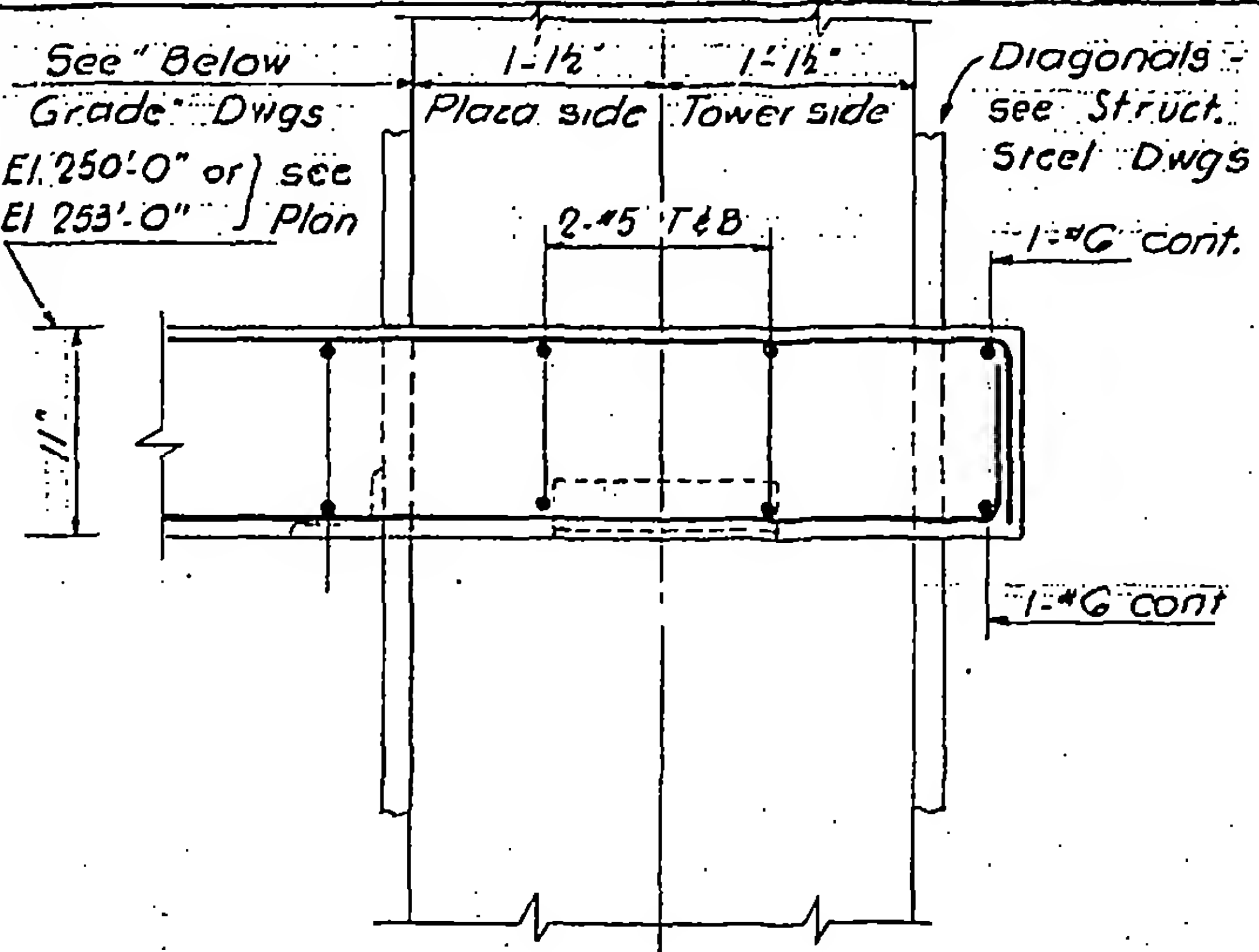
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUBLEVEL #4

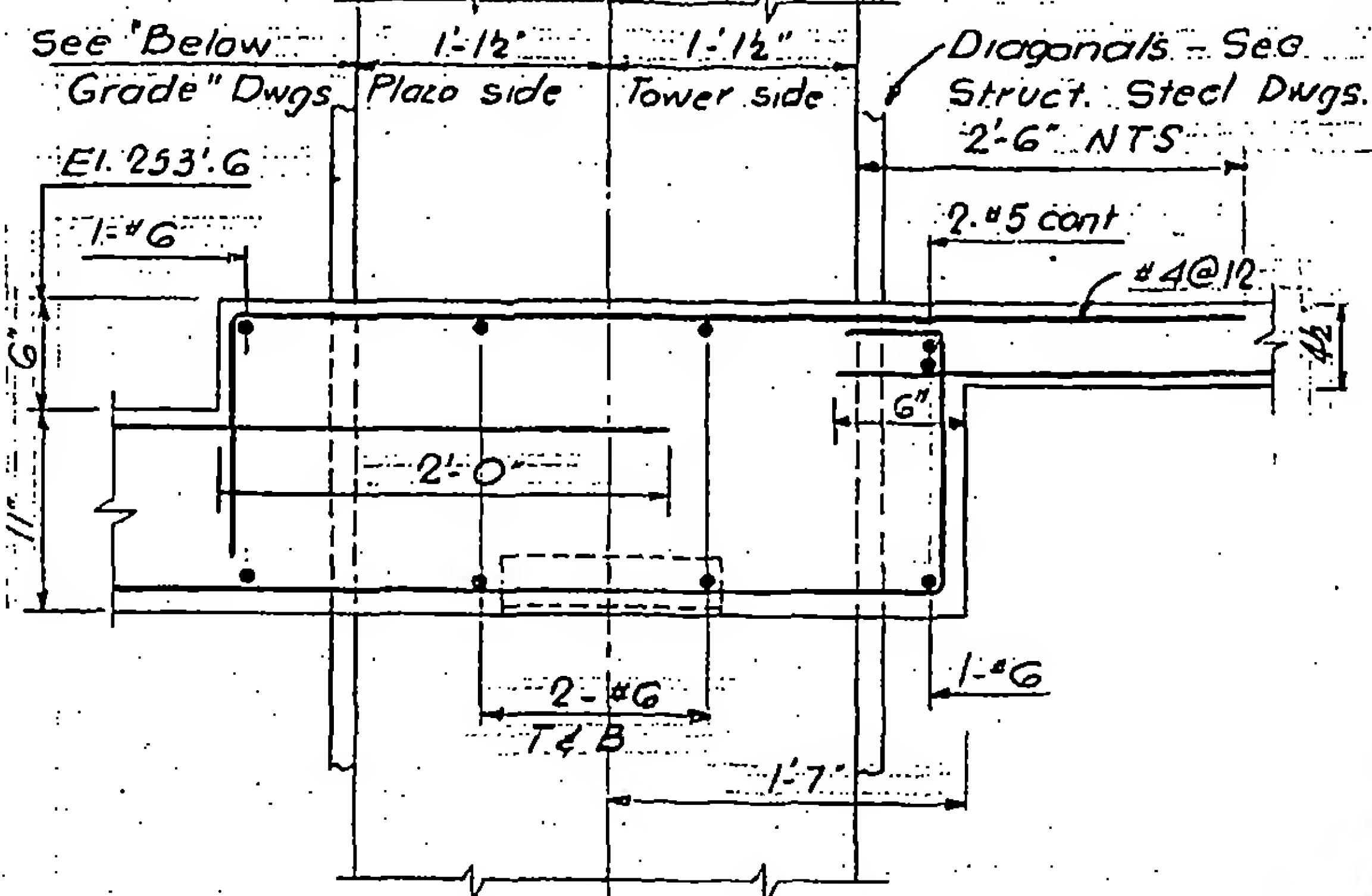
DATE 5-1-68

REVISIONS

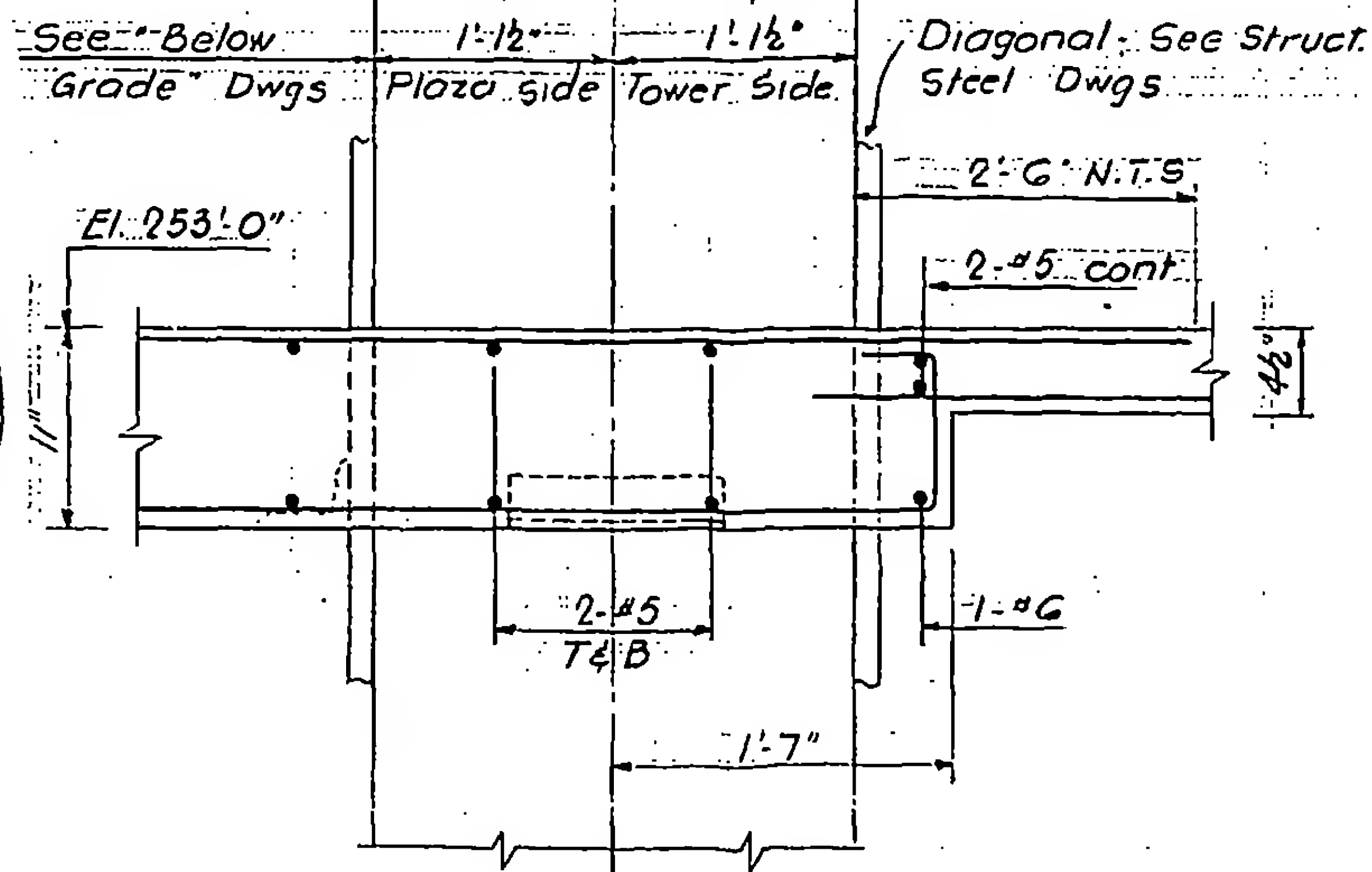
See "Below
Grade" Dwg.
El. 250'-0" or } see
El. 253'-0" } Plan



Section P-P



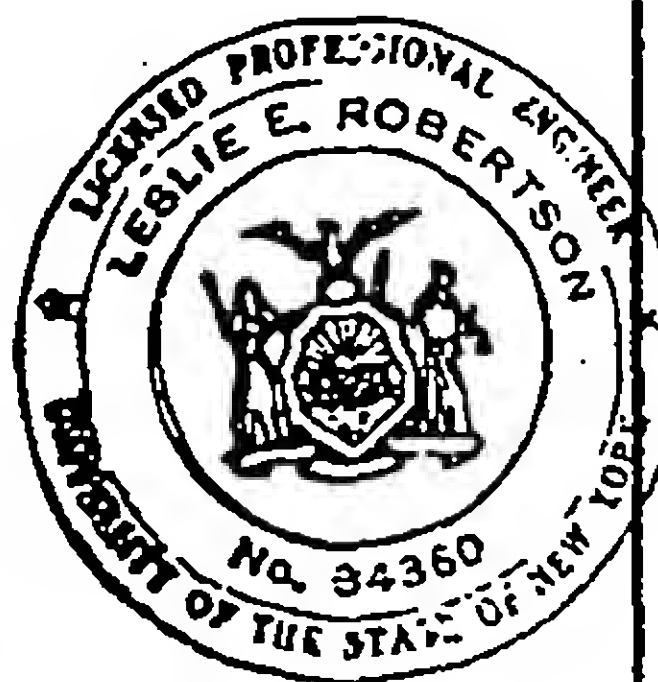
Section Q-Q



Section R-R

Note:

Replace any reinforcing bars interrupted by structural steel diagonals or other obstructions with an equal amount of reinforcement placed at the sides of the obstruction. Length and arrangement of bars to be similar to Det. 8-AB1-7B



8-AB4-8.4

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TITLE TYPICAL DETAILS AT SUB-LEVEL #3, EL. 264'

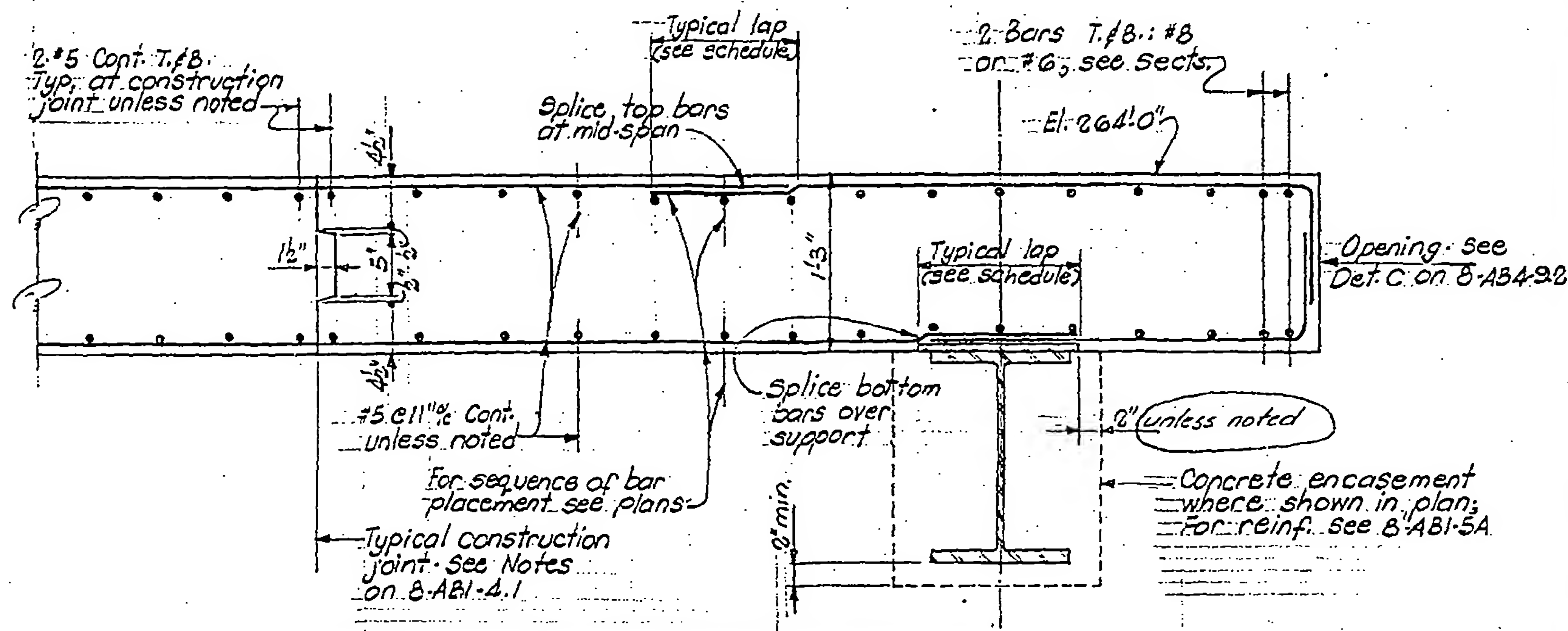
DATE 5-1-68

REVISIONS

GENERAL REVISION

1-17-69

5-9-69



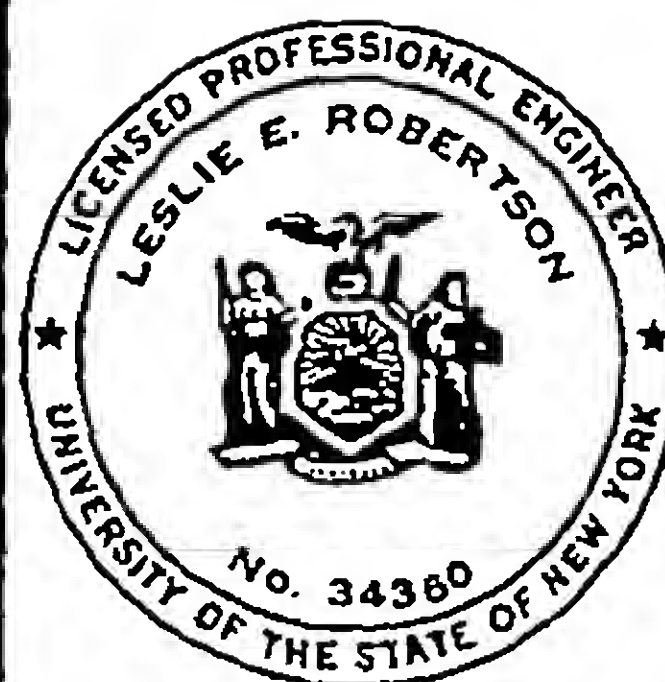
SECTION A-A THRU TYPICAL SLAB

NOTES:

1. Sheets 8-AB1 apply to sub-level #3 except as modified.
2. On #5 bars and larger use 90° hooks where possible, regardless of the shape of hook indicated in details.
3. Dowels may be used at construction joints. They shall be equal in size and number to the slab reinforcing bars, and shall overlap them by the length of Typical Lap shown in Schedule.
4. Stagger lap splices. See Note #5 on 8-AB1-2.2.
5. The number of bars given as T. & B. is to be doubled to obtain the total quantity. See note #11 on 8-AB1-2.2.

LAP SCHEDULE

2' 3"	for #5
2' 9"	for #6
3' 3"	for #7
3' 6"	for #8
4' 0"	for #9
5' 0"	for #10
6' 0"	for #11



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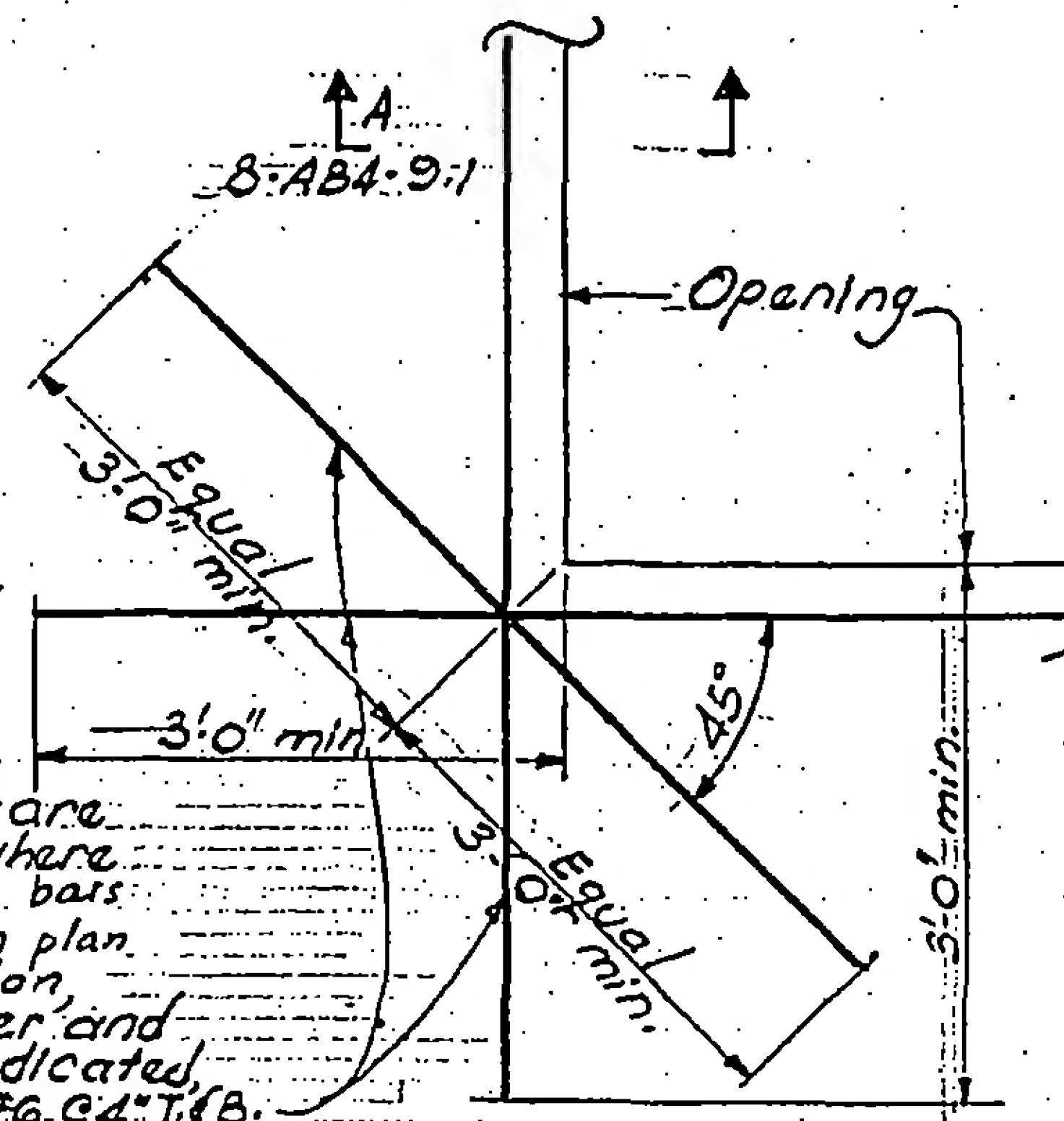
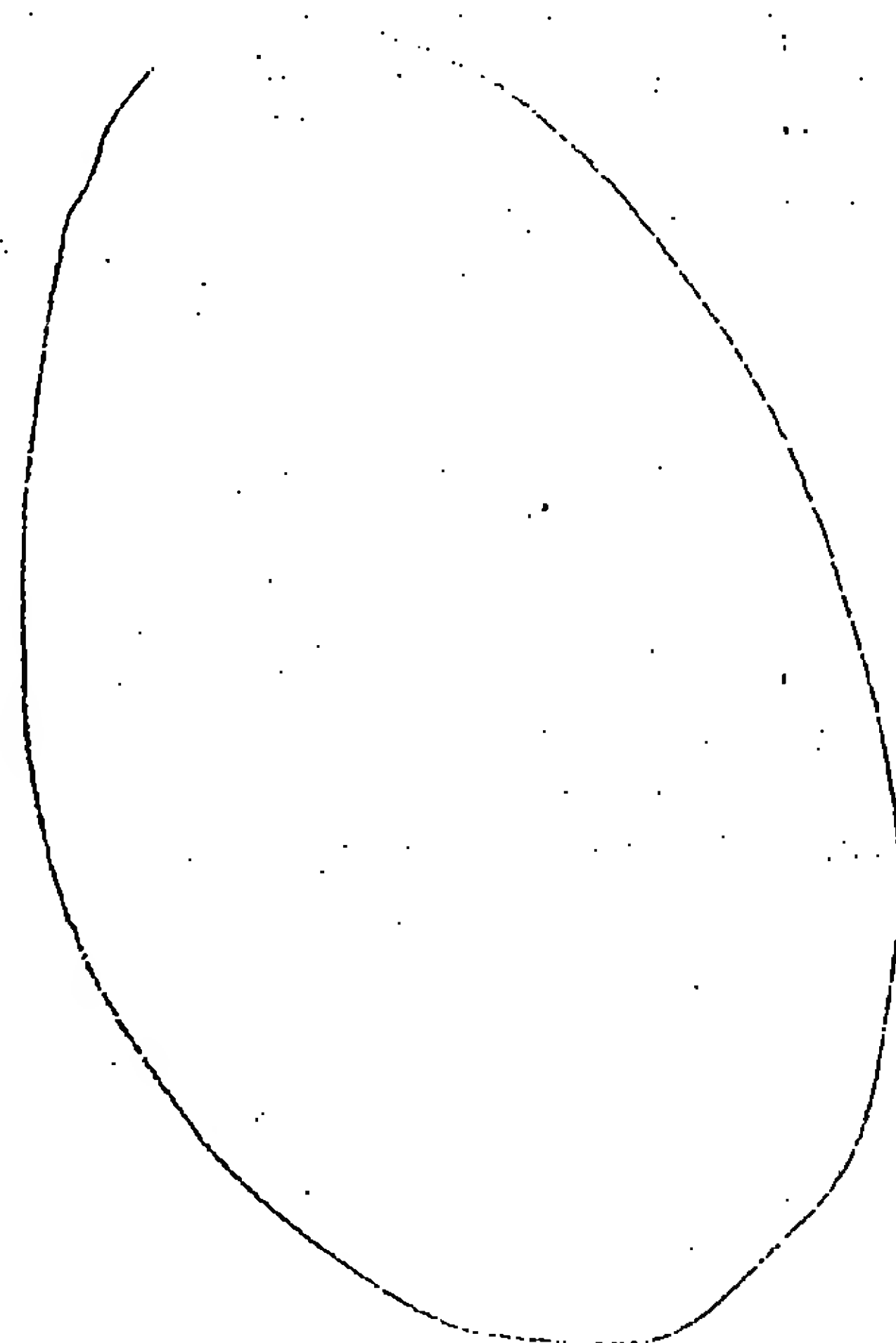
S.T.M.

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8-AB4-9.1

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These bars are required where shown. Where bars are shown in plan or in section, but number and size not indicated, provide 2 #6 C4 T/B. For #8 bars use 4-0" instead of 3-0" min.

Note:
 Where extension shown is not feasible, run bar as far as possible and hook and.

Detail C
 Typical at Openings Wider Than 18"



8-AB4-9.2

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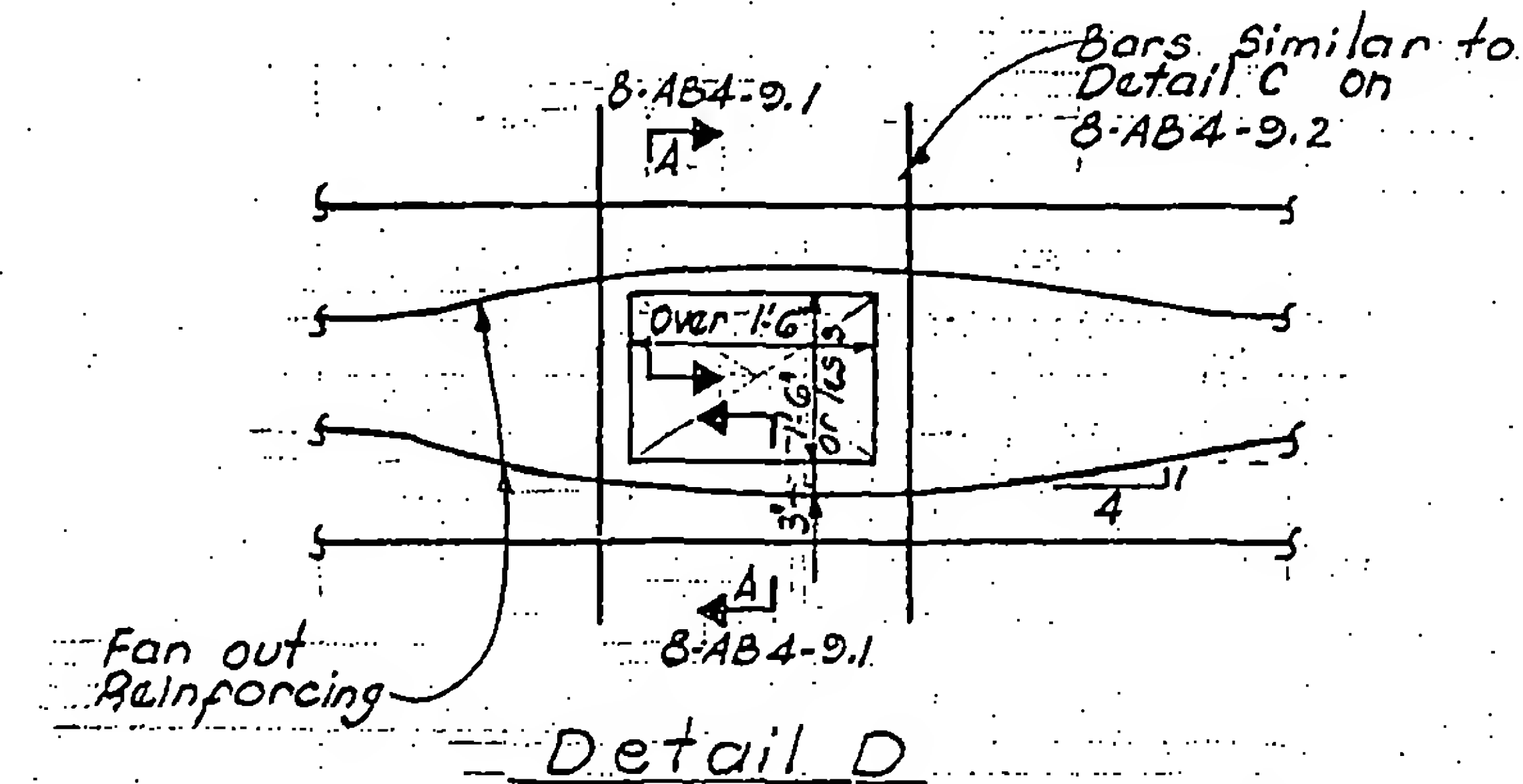
PROJECT THE WORLD TRADE CENTER

TITLE TYPICAL DETAILS AT SUBLEVEL #3, EL. 264'

DATE 5-1-68

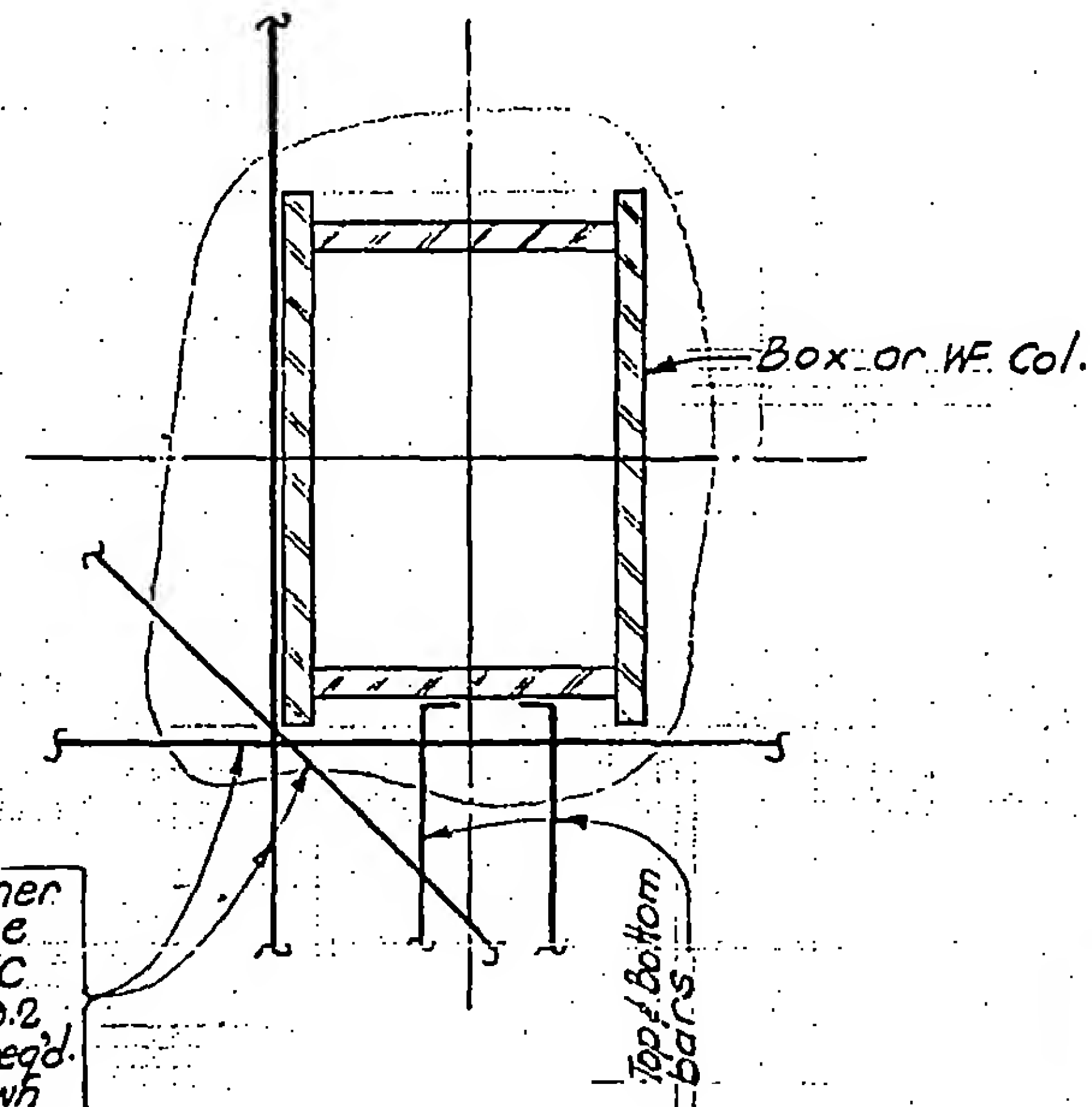
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TYPICAL AT OPENING 18" WIDE OR LESS

Added corner bars same as Detail C on 8-AB4-9.2. Bars are req'd. where shown



TYPICAL AT COLUMNS



8-AB4-9.3

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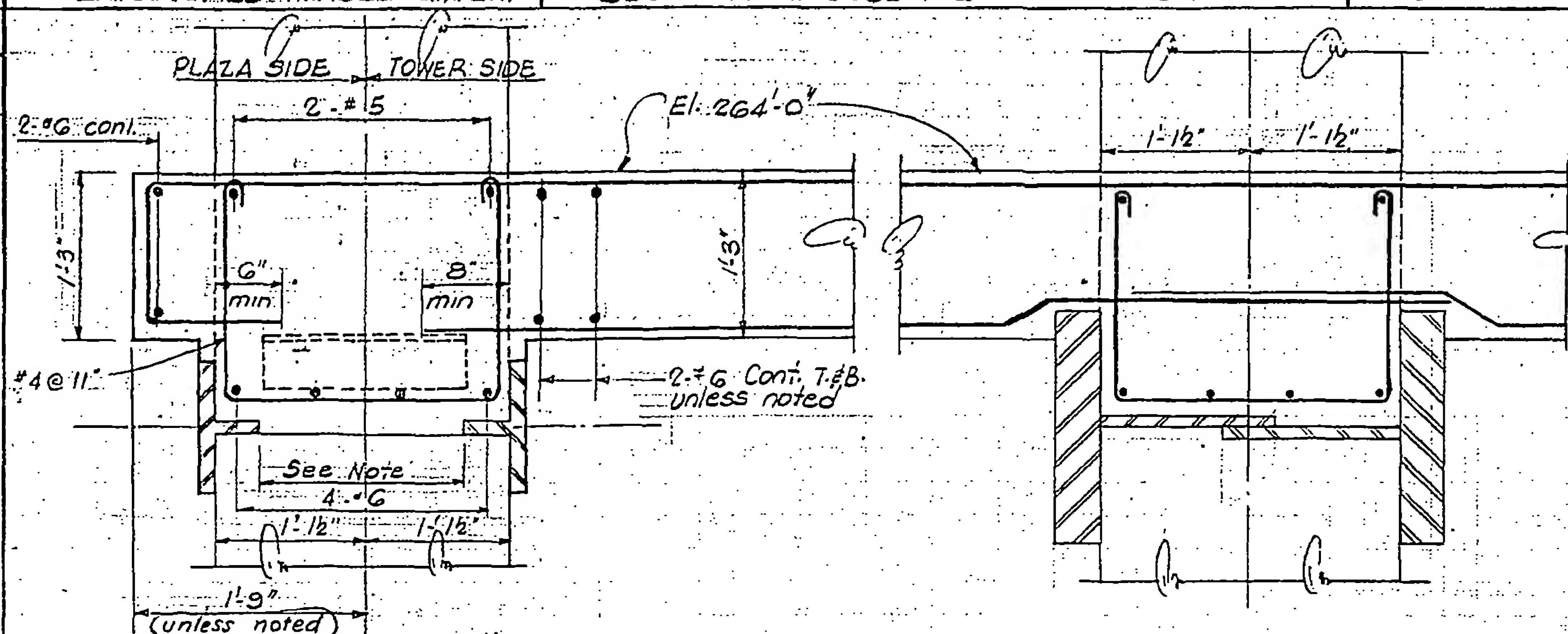
PROJECT THE WORLD TRADE CENTERTITLE SECTIONS AT SUBLEVEL #3 - EL. 264'DATE 5-1-68

REVISIONS

GENERAL REVISION

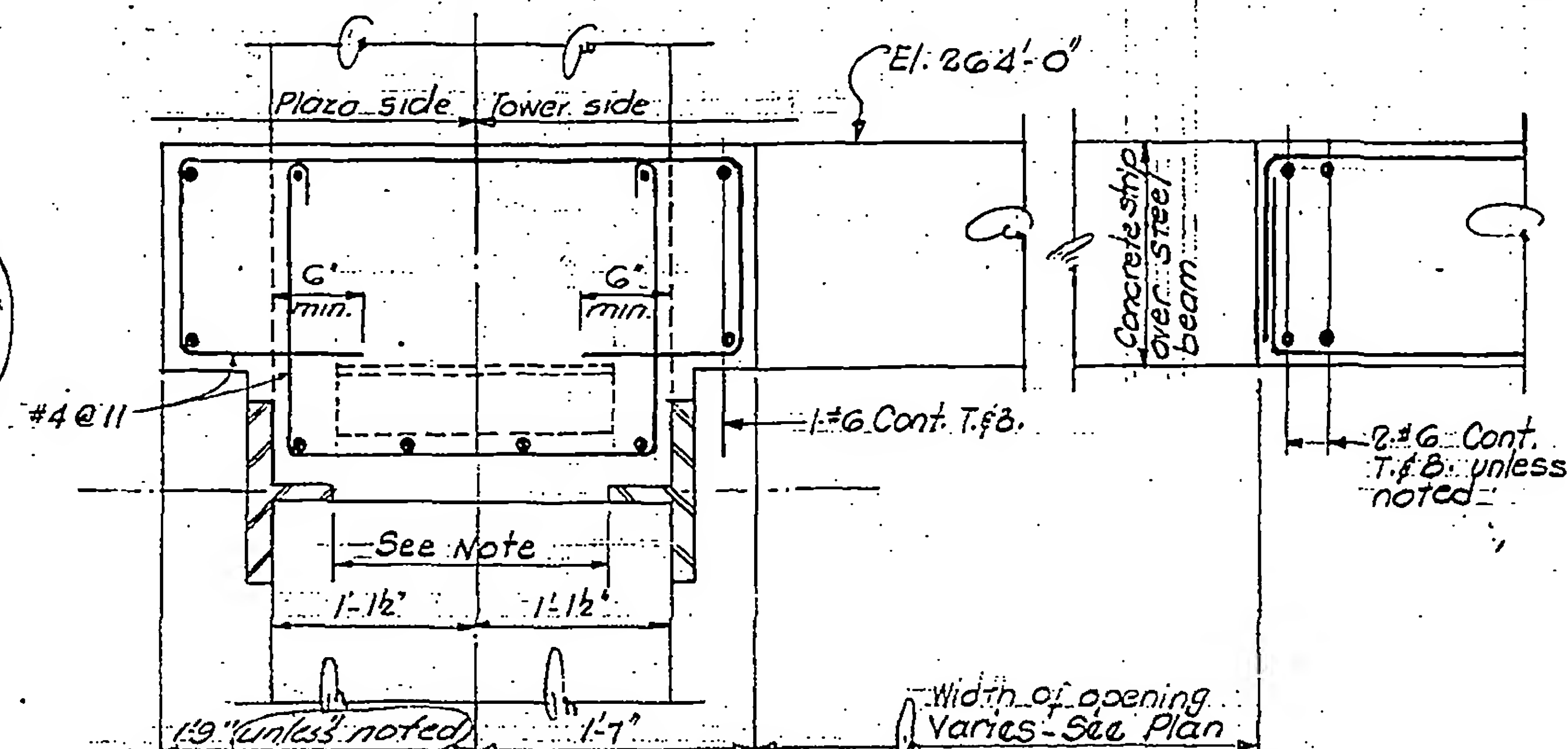
1-17-69

5-9-69



Section A-A

Section a-a

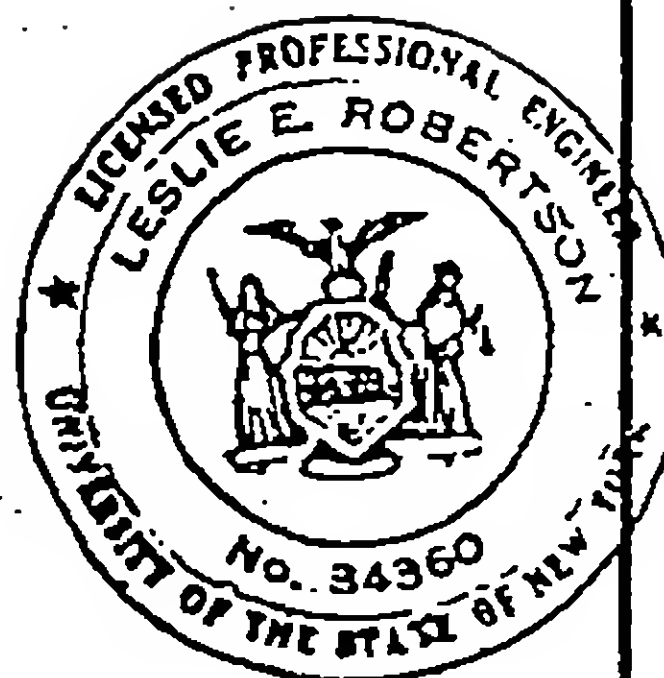


Section B-B

NOTE: Section same as section A-A except as shown

NOTE:

Sizes of structural steel members vary, as exemplified in sect. a-a this sheet. For full details see structural steel drawings.



8-AB-4-10-1

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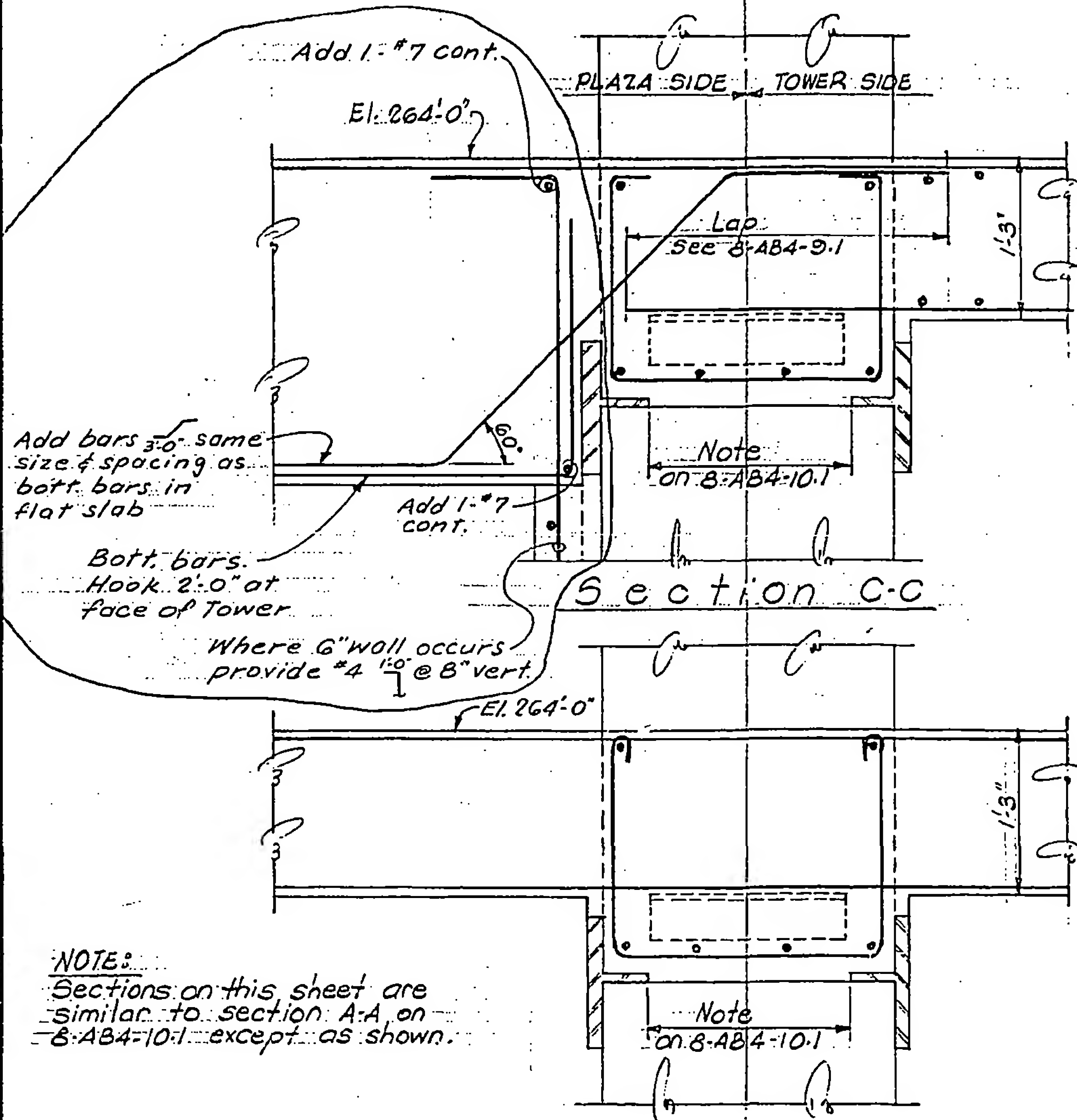
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUBLEVEL #3 - EL. 264

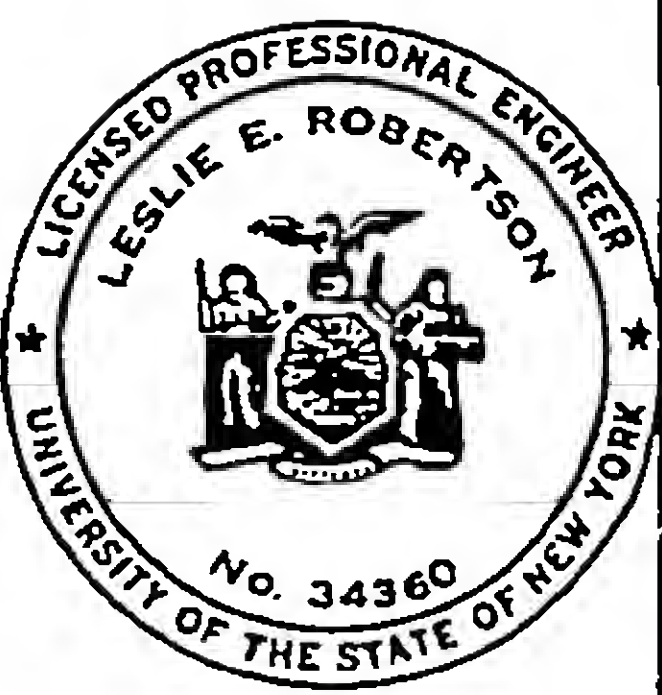
DATE 5-1-68

REVISIONS

GENERAL REVISION
1-17-69
4-9-69



NOTE:
Sections on this sheet are similar to section A-A on 8-AB4-10.1 except as shown.



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8-AB4-10.2

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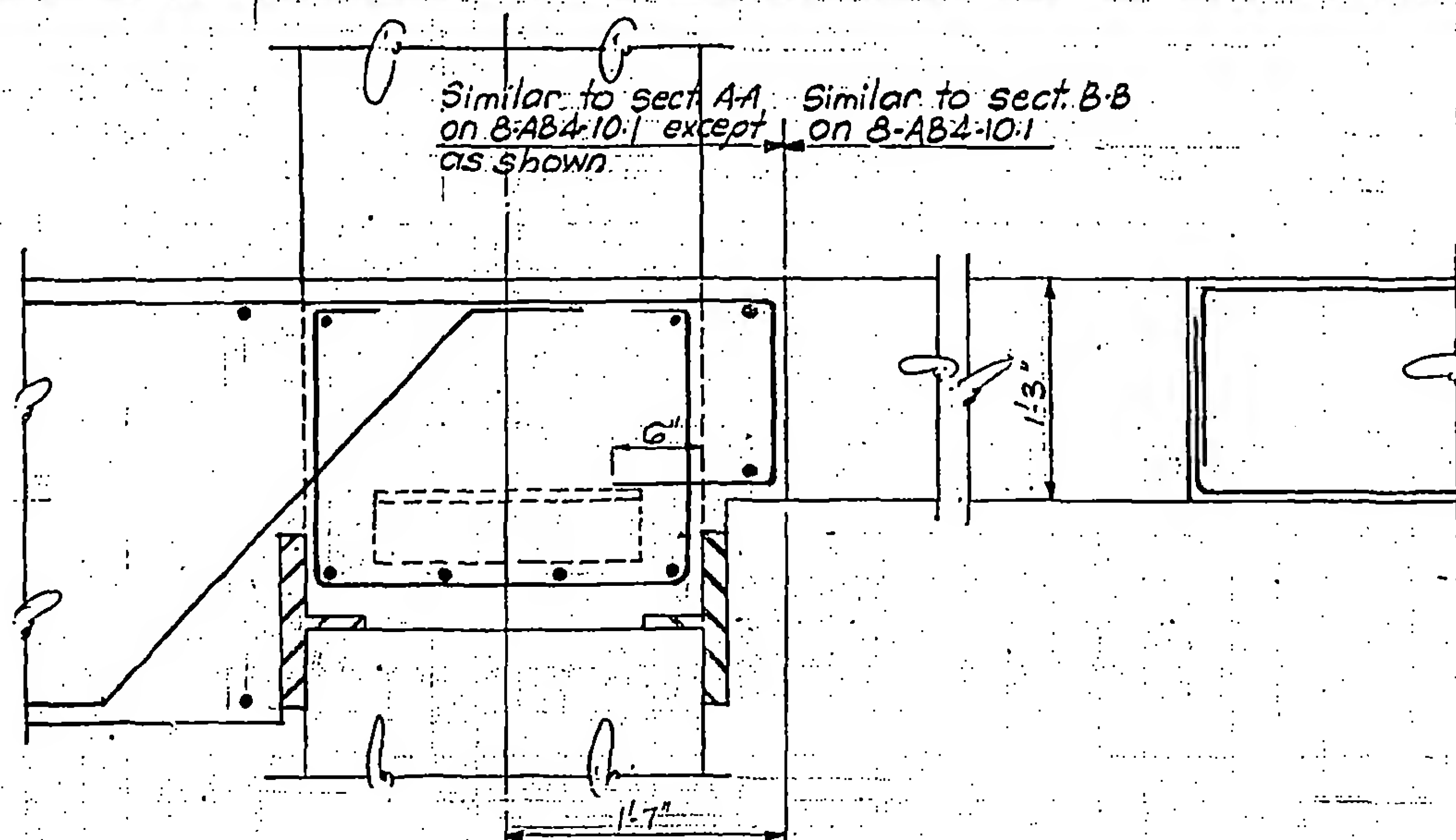
TITLE SECTIONS AT SUBLEVEL #3 - EL 264'

DATE 5-1-68

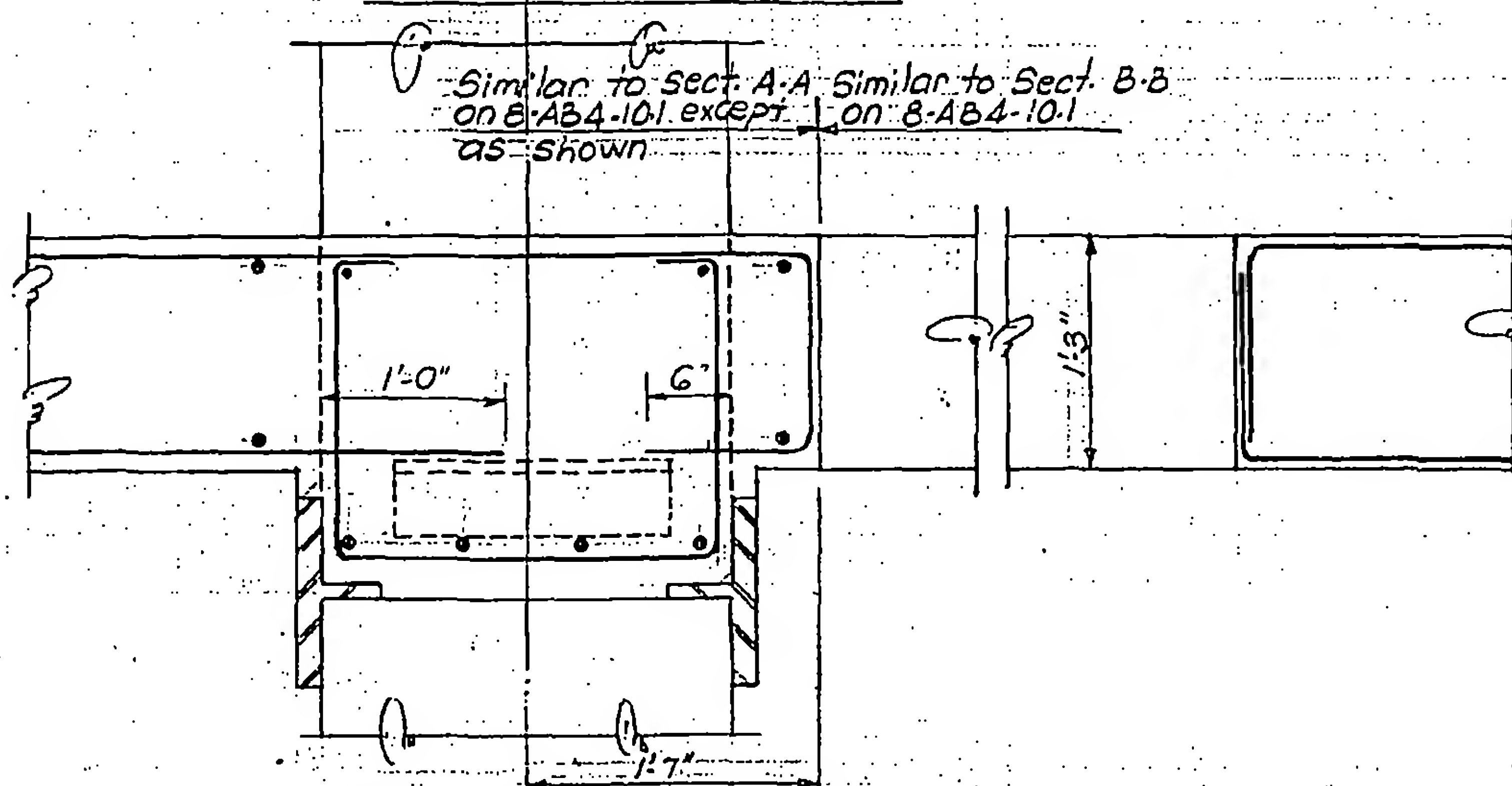
REVISIONS

GENERAL REVISION

1-17-69

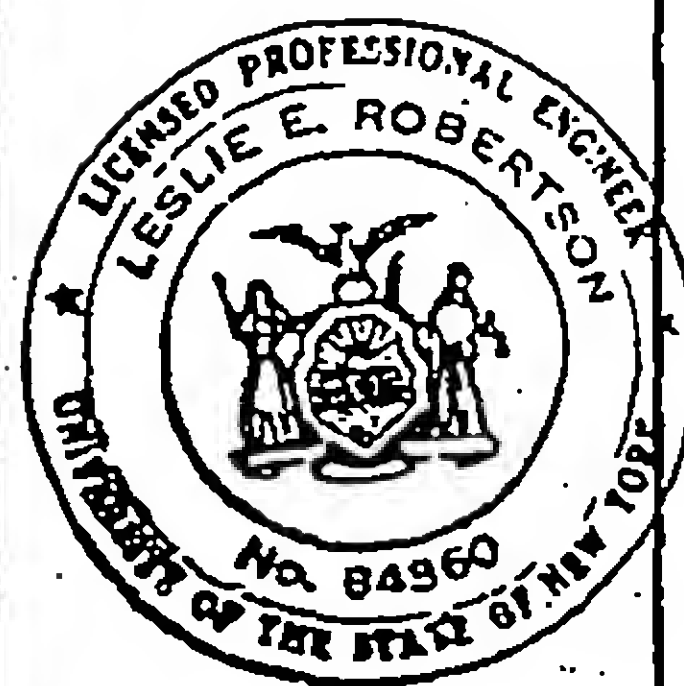


Section E-E



Section F-F

8-AB4-10.3



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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUB LEVEL #3 - EL. 264'

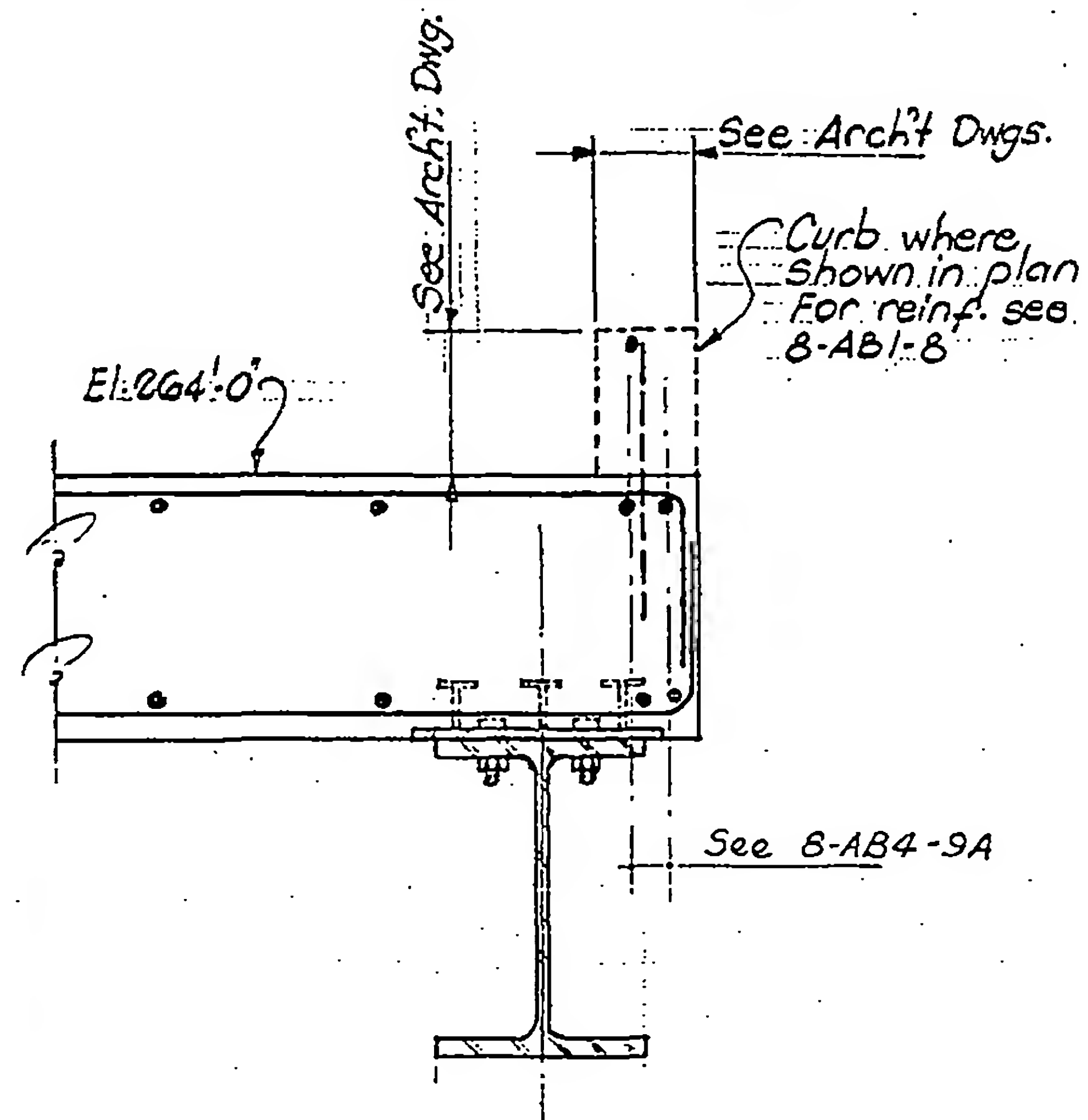
DATE 5-1-68

REVISIONS

GENERAL REVISION

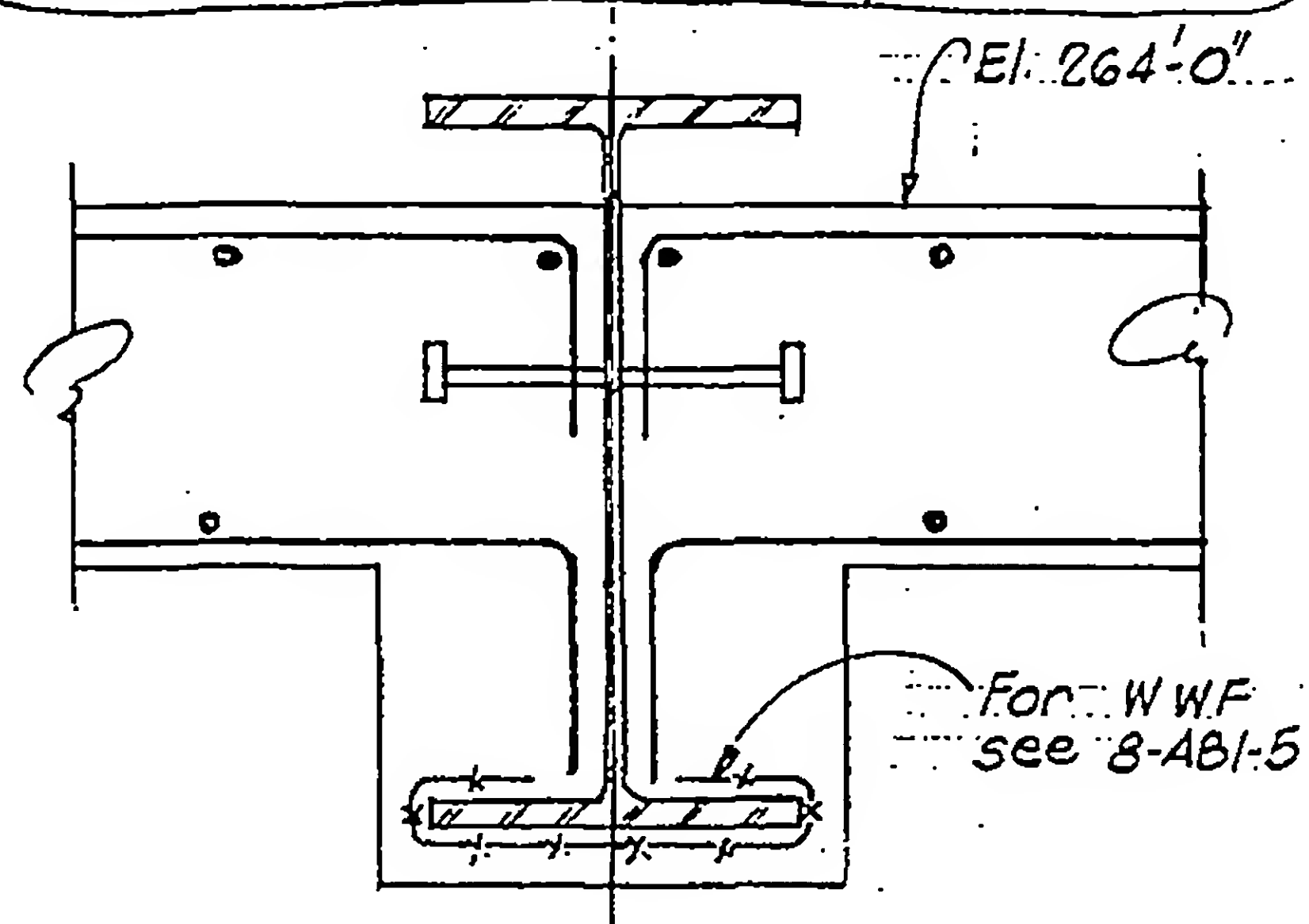
1-17-69

8-5-69



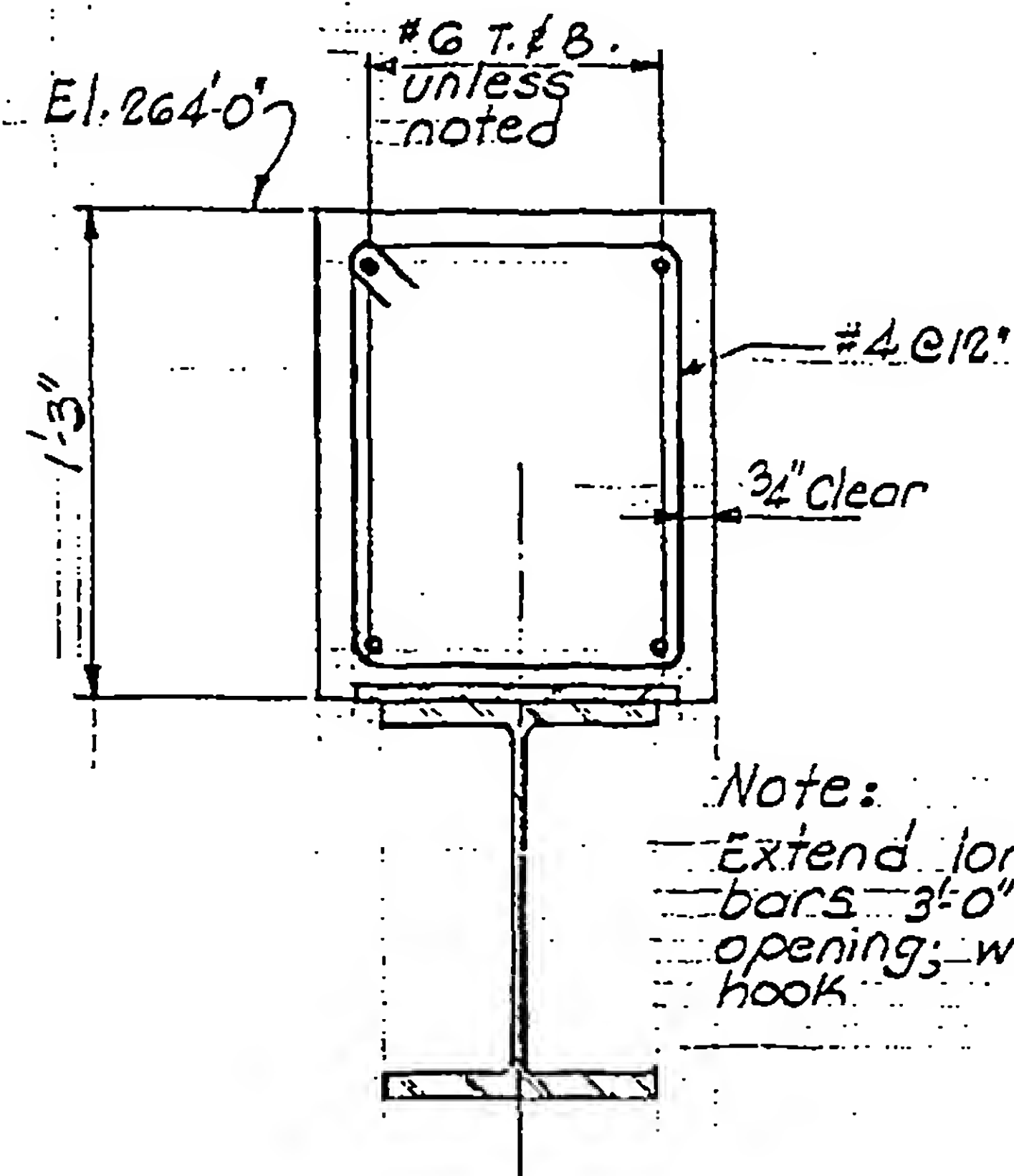
Section G-G

Similar to 8-AB4-9A except as shown



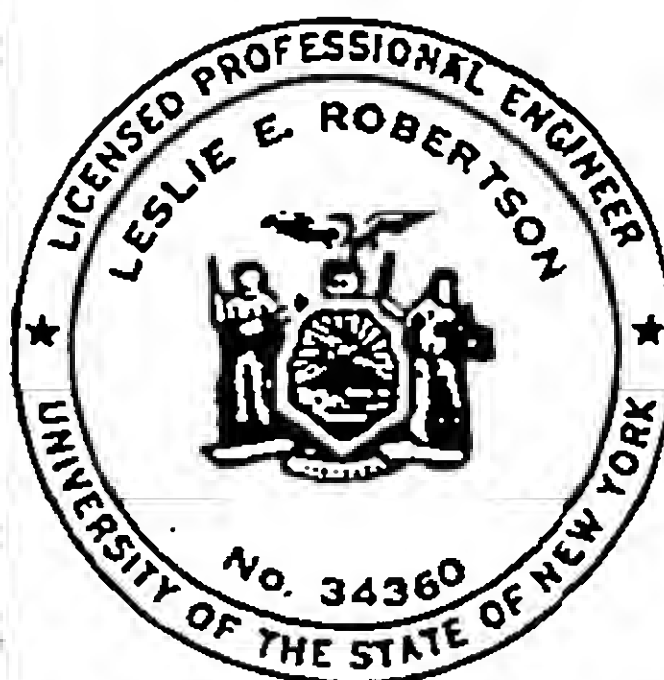
Section H-H

Similar to 8-AB4-9A except as shown



Section J-J

Note:
Extend longitudinal
bars 3'-0" beyond
opening; where impossible,
hook.



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8-AB4-10.4

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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUB-LEVEL #3, EL. 264'

DATE 1-17-69

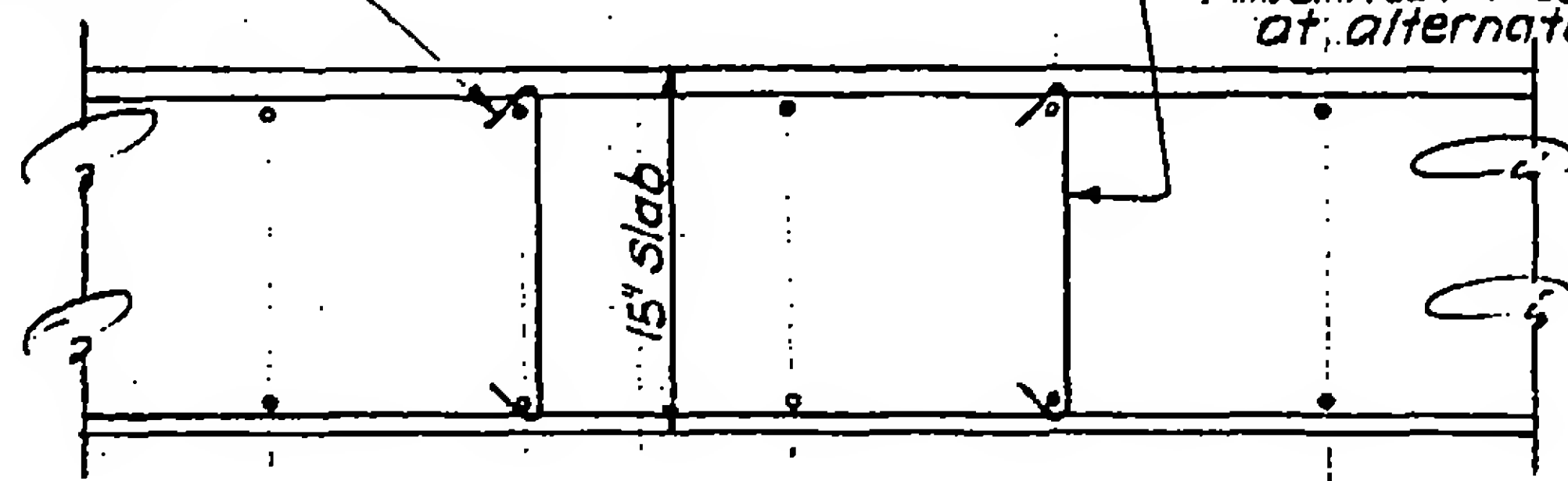
REVISIONS

1-17-69

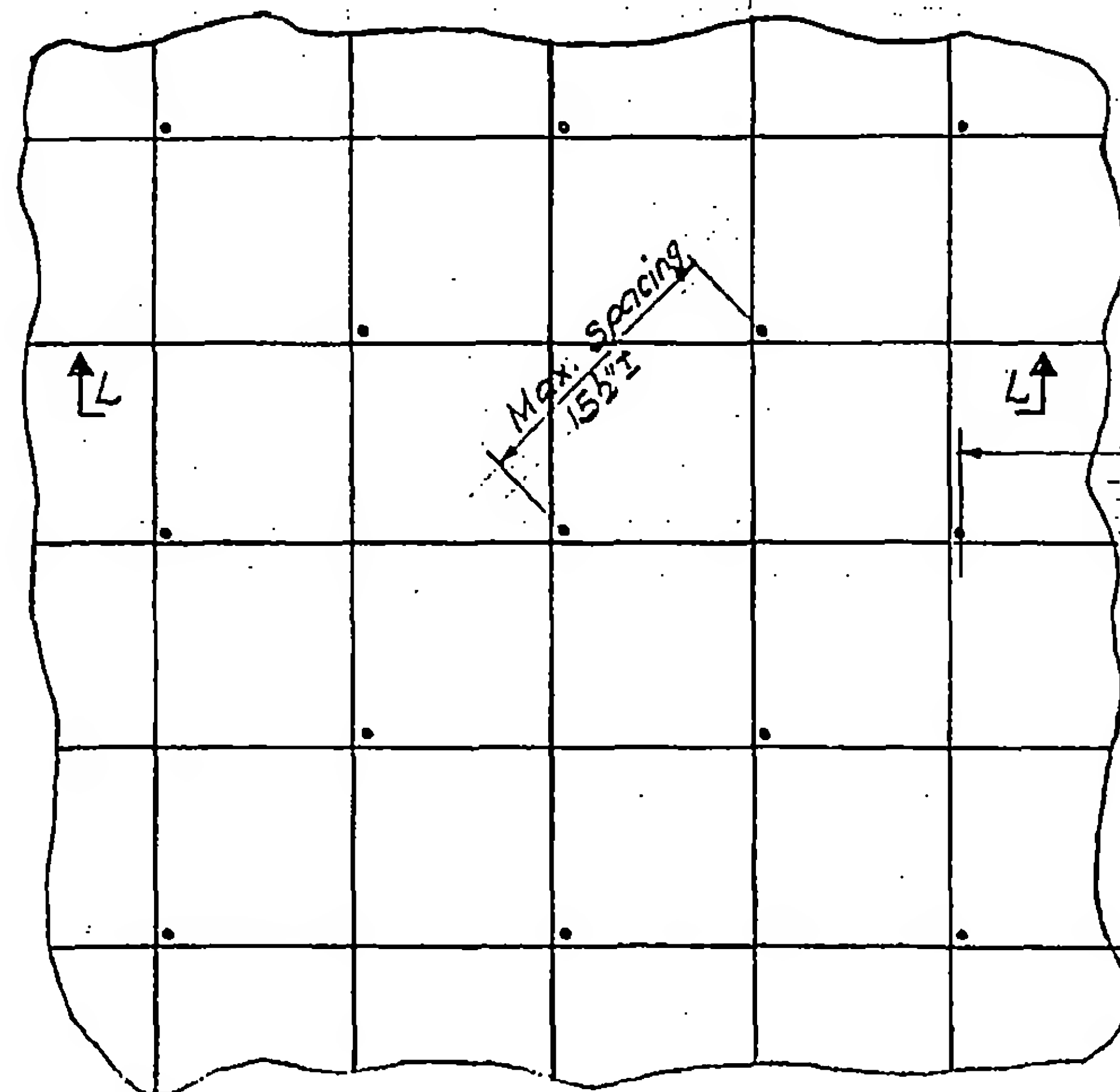
1-22-69

Hooks may be 135°
(as shown), or 90°

#3 min. size
vertical ties
at alternate bars

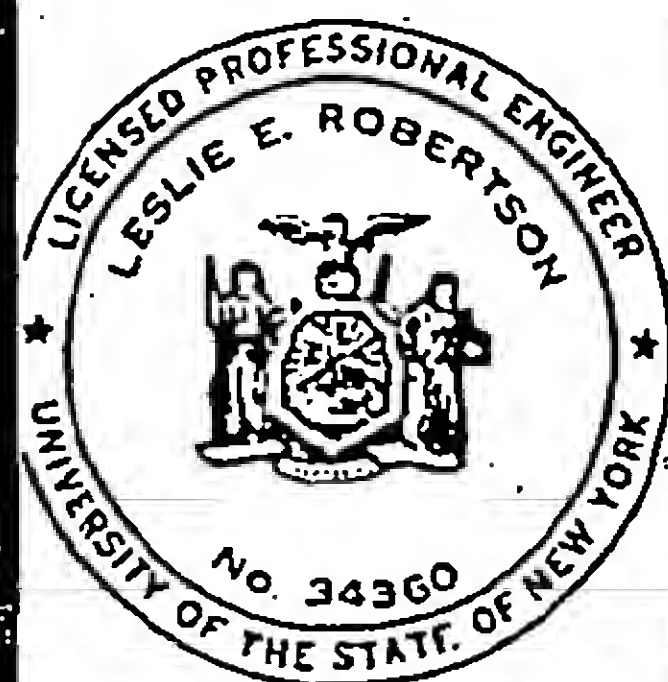


Section L-L



Dots denote
vertical ties

PLAN
Detail K



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S.T.M.

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8-AB4-10.5

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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUBLEVEL #3 - EL. 264'-0"

DATE 4-25-69

REVISIONS

8-5-69

See JK dng. Tower side

Elevator lobby

Lap 2'-3"

EL 264'-0" 6"

1'-3"

DWL - 5 @ 5' 2" x 5'-0" min

1/2" x 16" keys
@ 24" O.C.

Slab I

Slab II

Maintain 2" min distance
from stud to const jt

Section N-N

Similar to 8-AB4-9A except as shown

Section M-M

Similar to Sect A-A on
8-AB4-10.1 except as shown

1/2" x 16" keys @ 24" O.C.

Slab I

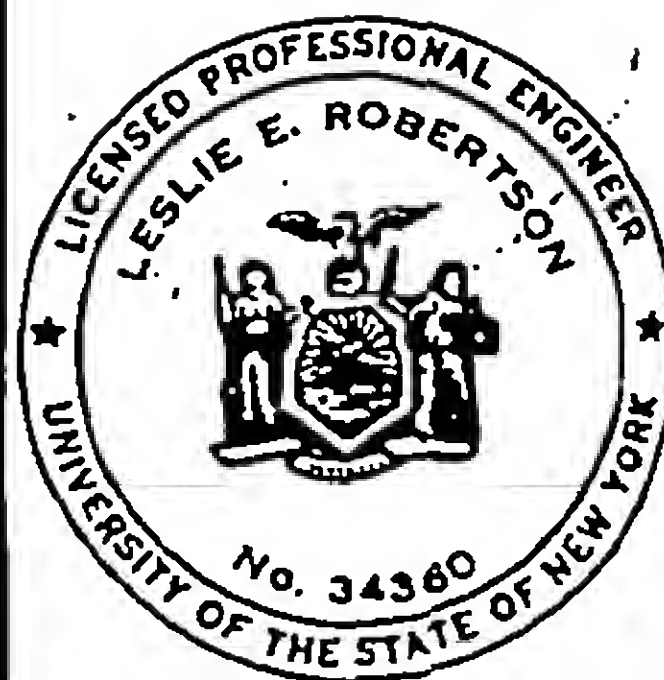
Slab II

DWL 5 @ 5' 2" x 5'-0" min

Varies
See plan

Section N-N'

Similar to 8-AB4-9A except as shown



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8-AB4-10.6

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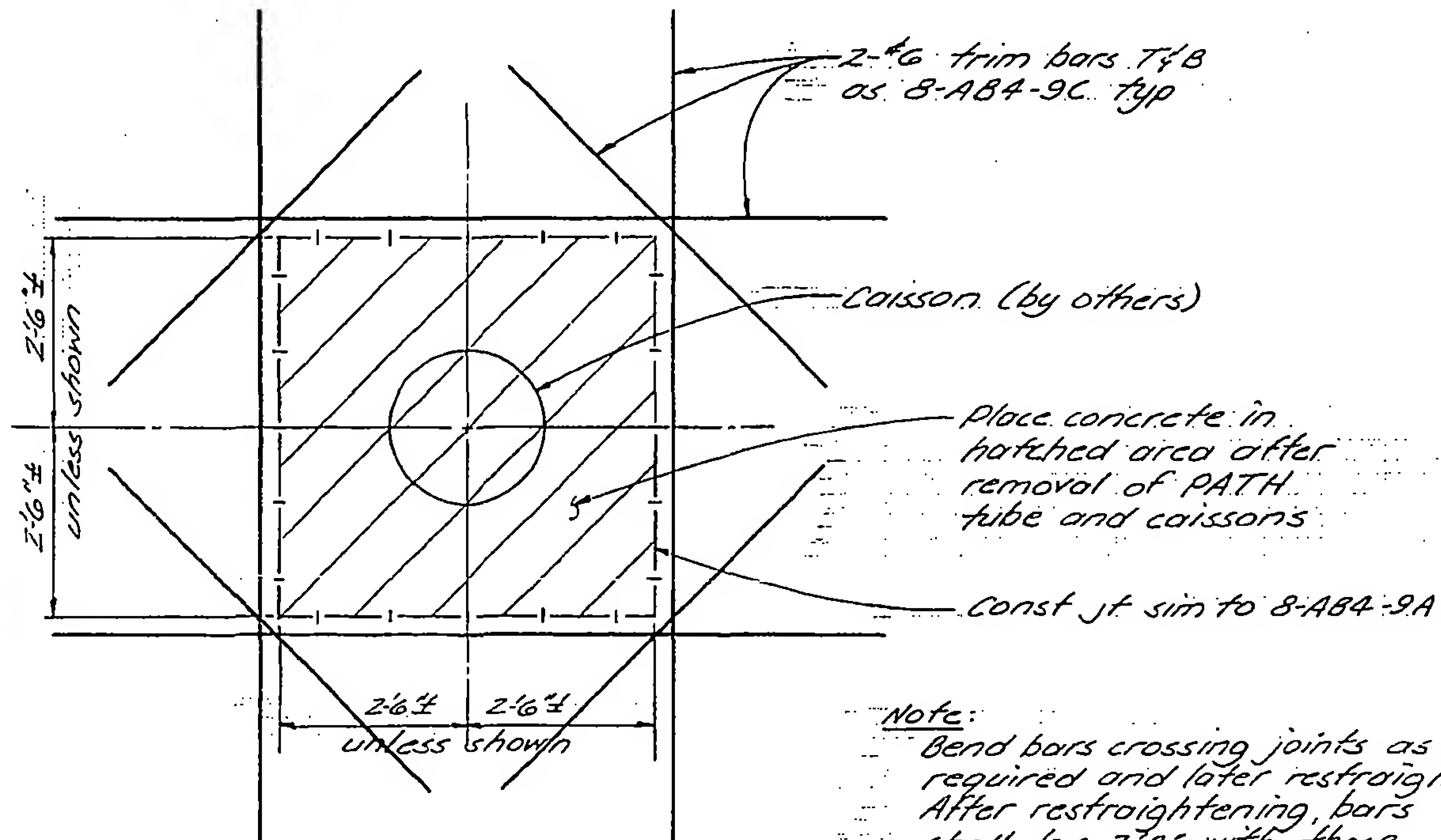
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TITLE DETAIL AT SUBLEVEL #3 - EL 264'

DATE 6-3-69

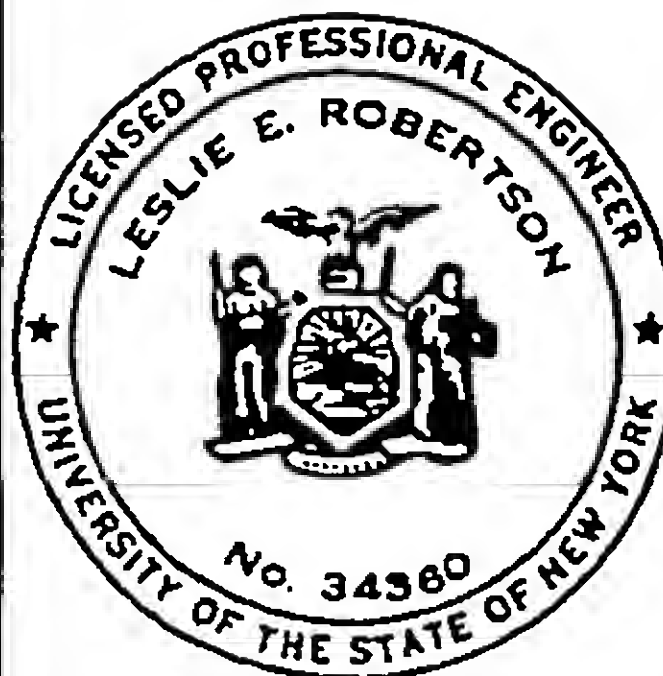
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8-5-69



Detail Plan P

Tower B only



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8-AB4-10.7

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TITLE SECTION AT SUBLEVEL * 3-EL 264

DATE 8-5-69

REVISIONS

Temporary expansion joint. See 8-JK5-14.1

5'-0"

Section Q-Q

Extend #11 bars 1'-6"

Slab. See SCK drawings

See 8-AB4-10D for information not shown

#11 bar top & bot see Plan

Prepare square ends on #11 bars for "Cordweld" splices. See SCK drawings. Coordinate the layer in which #11 are placed with the layer in which #11 shown in SCK drawings are placed.

Section R-R

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8-AB4-10.8

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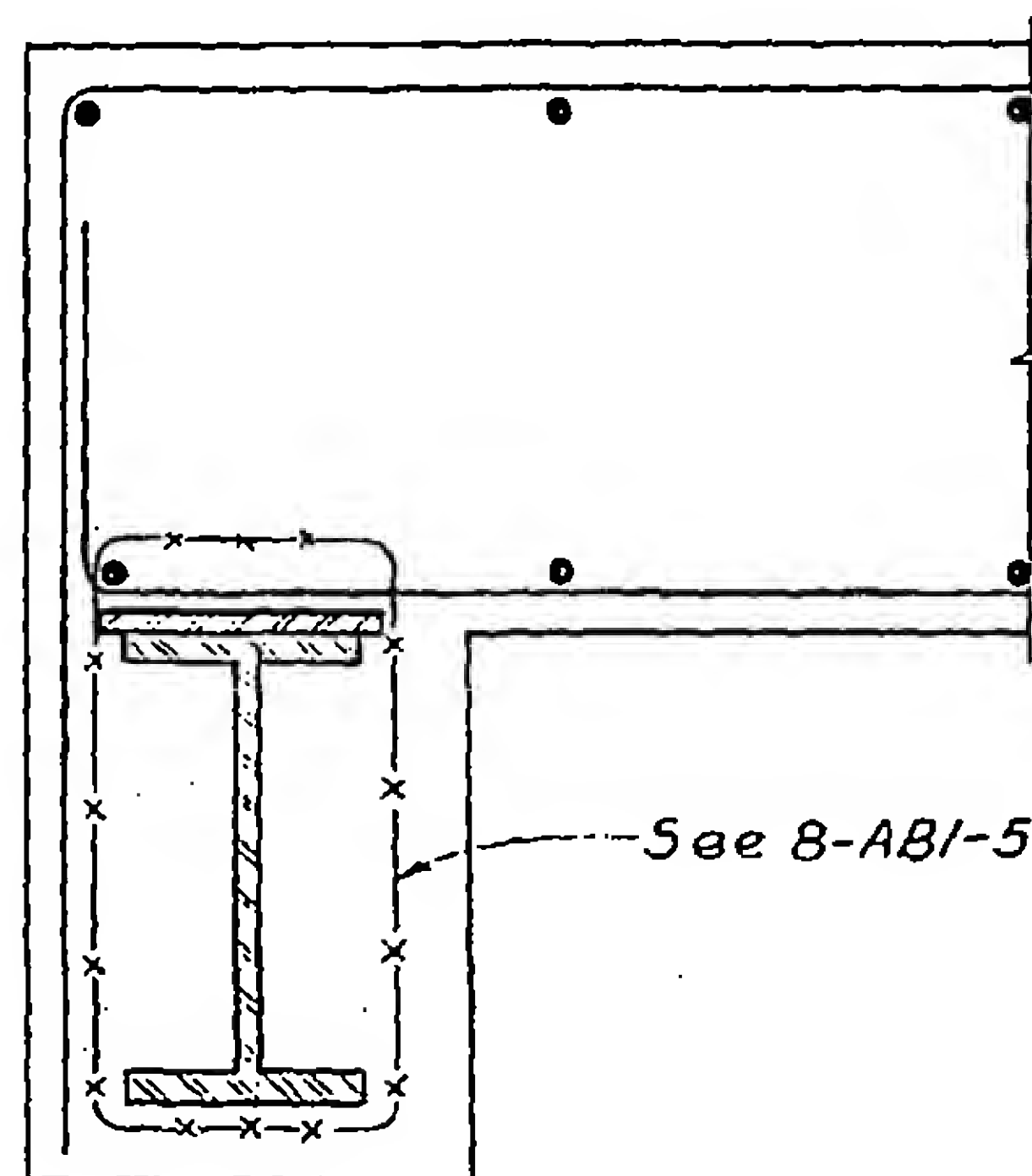
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PROJECT THE WORLD TRADE CENTER

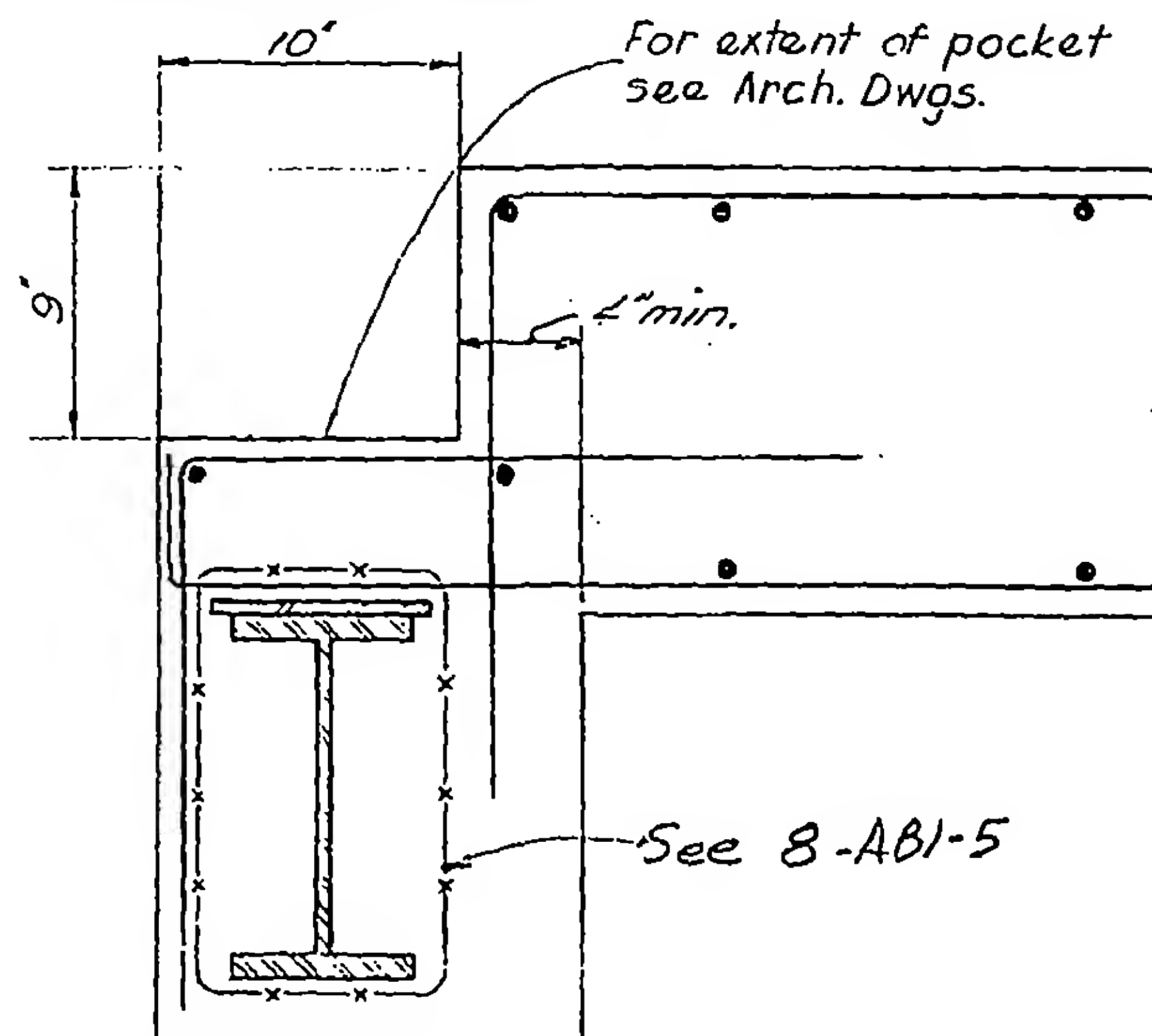
TITLE SECTIONS AT SUBLEVEL # 3-EL 264

DATE 8-5-69

REVISIONS

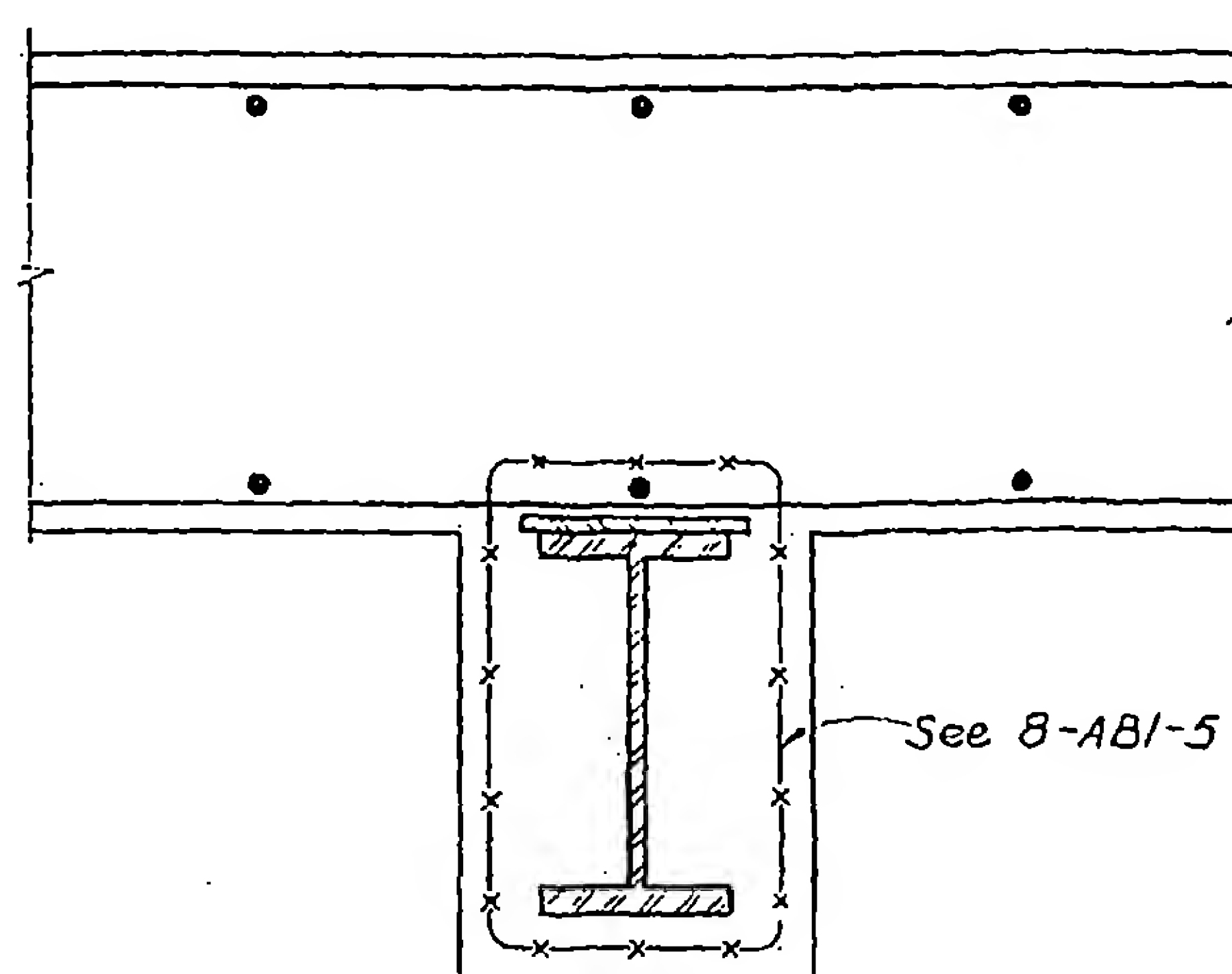


Section S-S

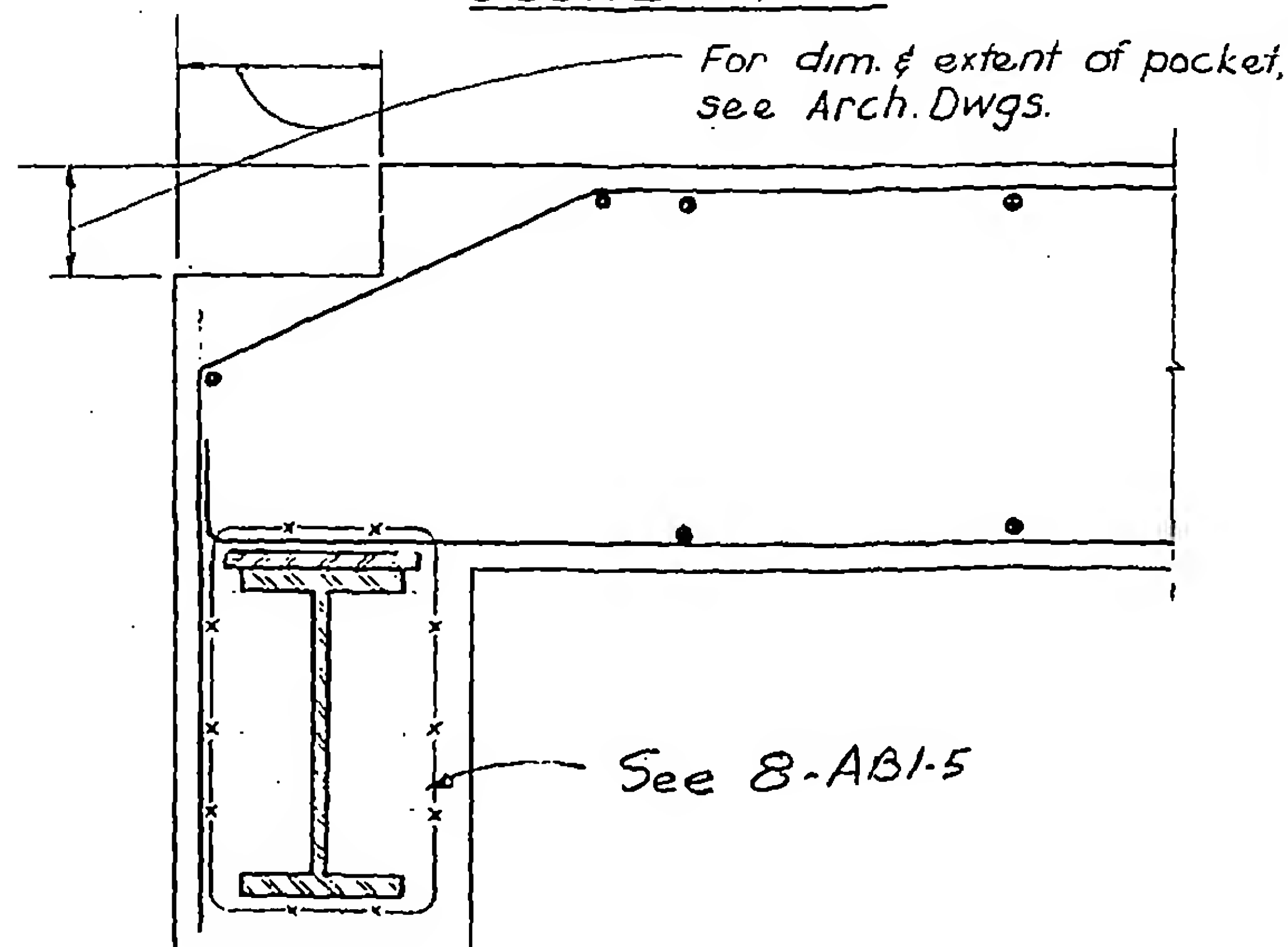


Section U-U

Section U-U similar to 8-AB4-9A except as shown



Section T-T



Section V-V

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8-AB4-10.9

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TITLE

SECTIONS AT SUB-LEVEL #2, EL. 274'-0"

DATE

5-1-68

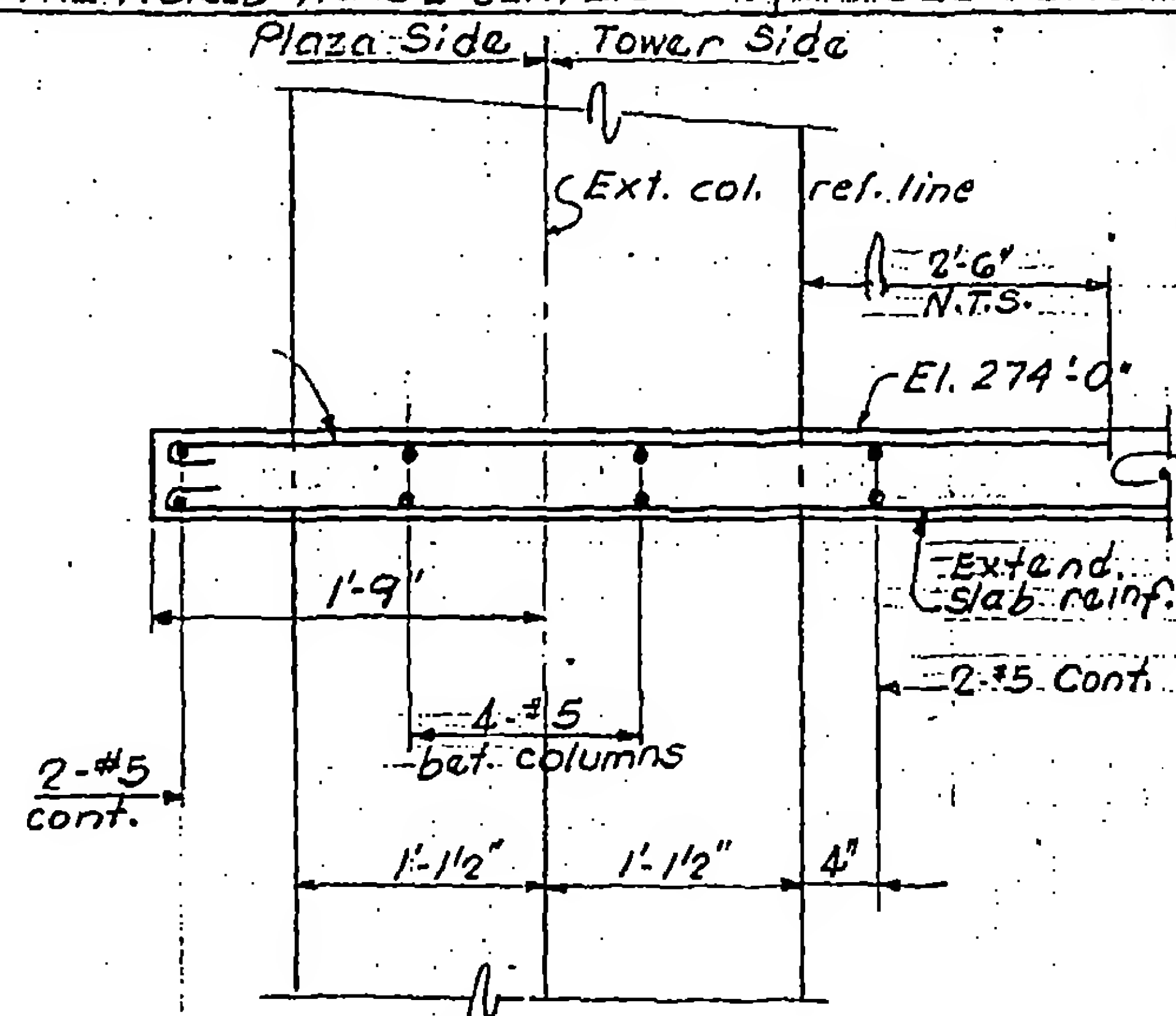
REVISIONS

1-14-69

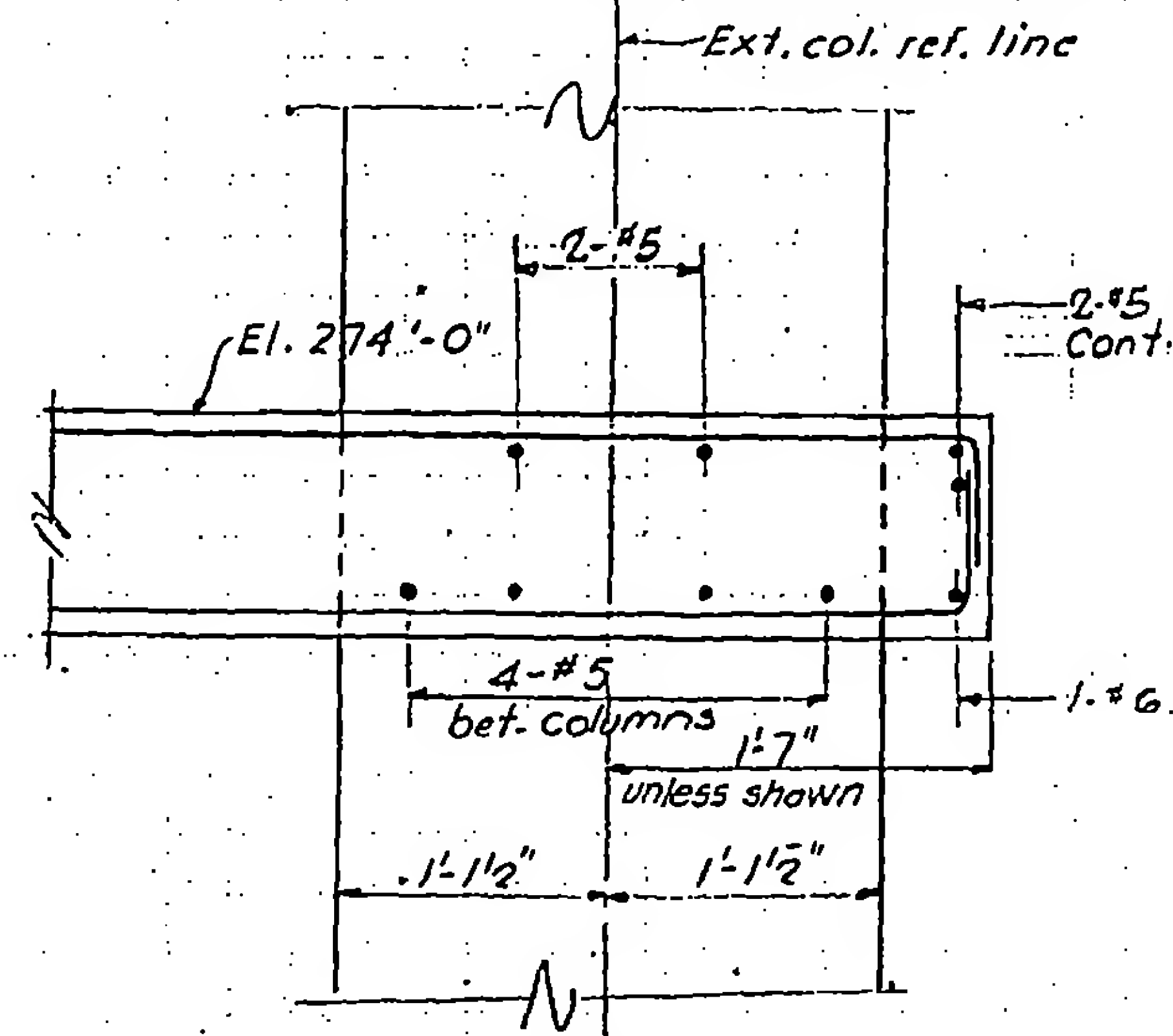
Gen. Revision

1-22-69

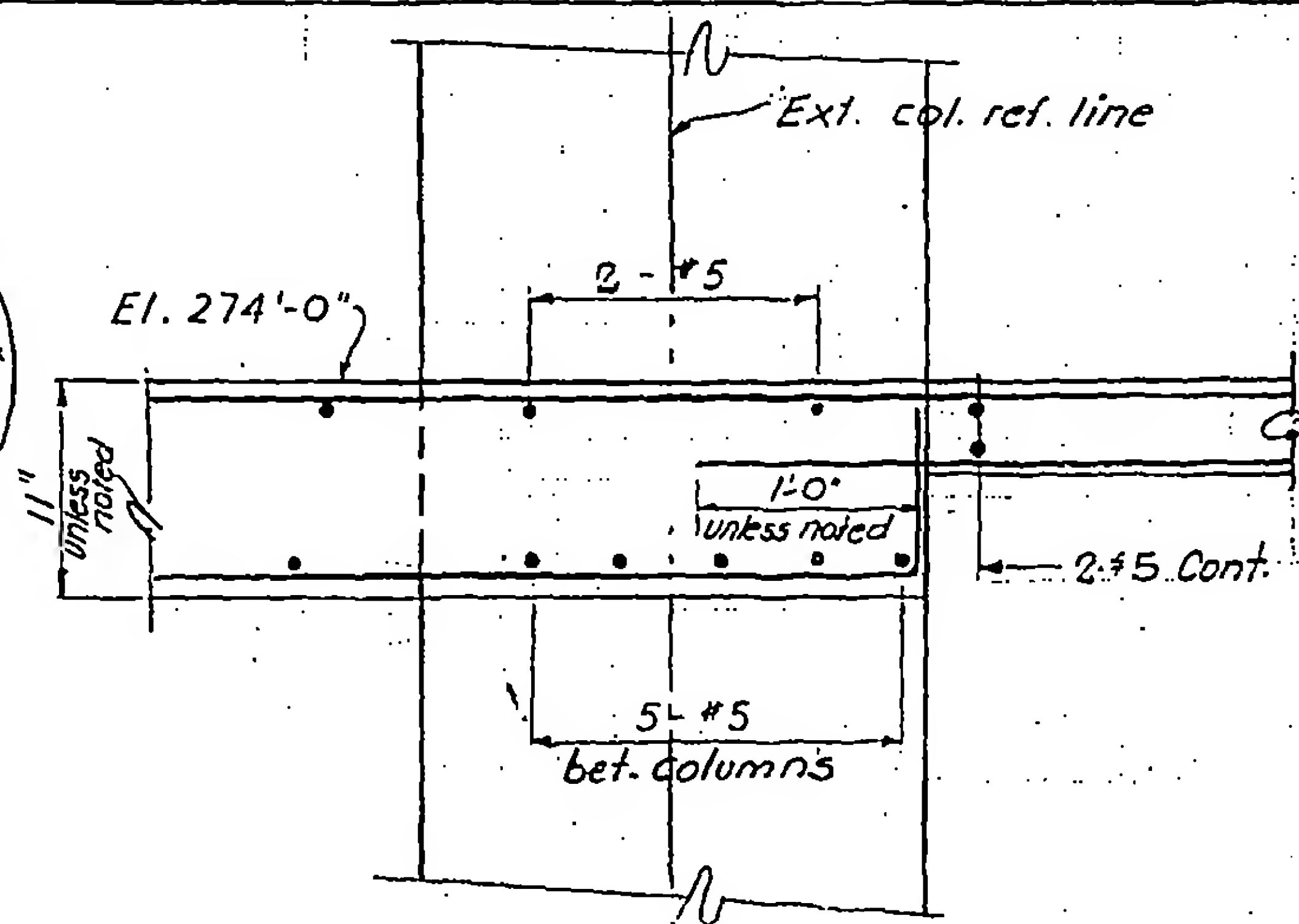
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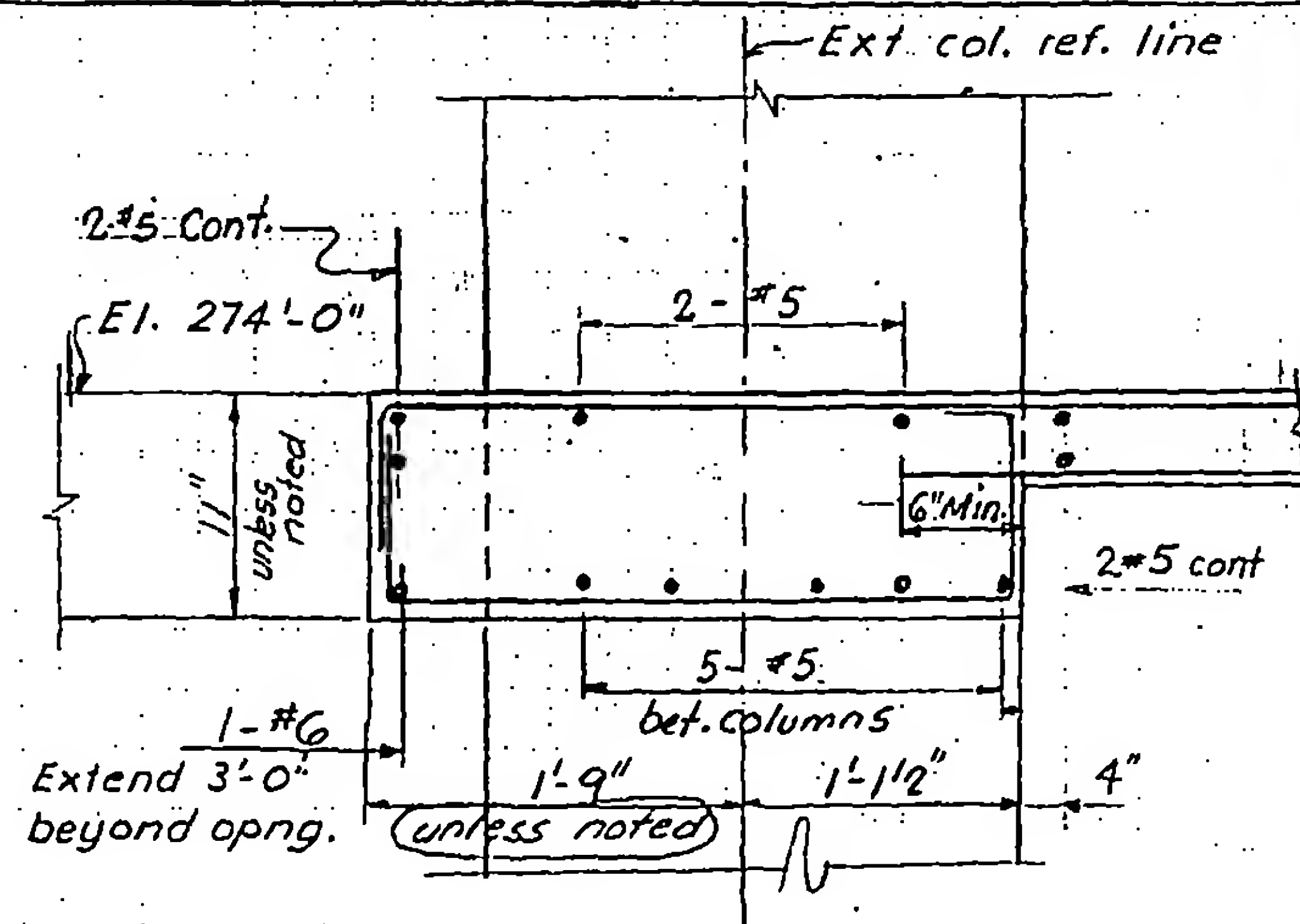
Section A-A



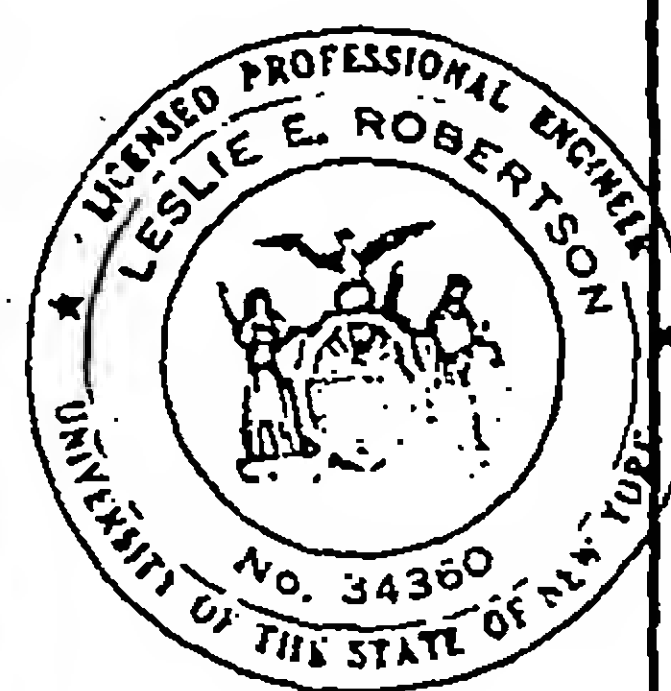
Section C-C



Section B-B



Section D-D



8-AB4-11.1

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THE WORLD TRADE CENTER

TITLE

SECTIONS AT SUB-LEVEL #2, EL. 274'-0"

DATE

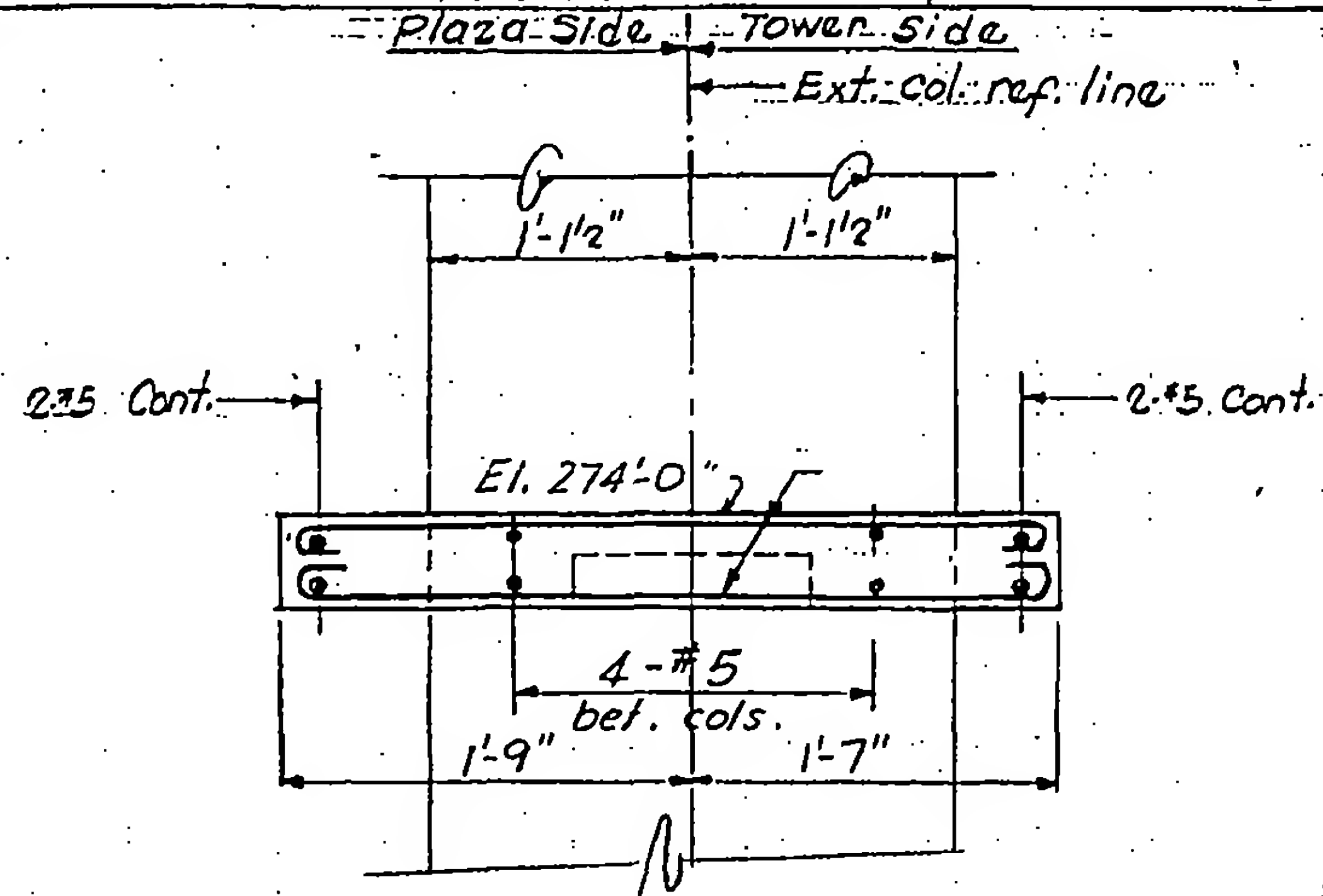
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REVISIONS

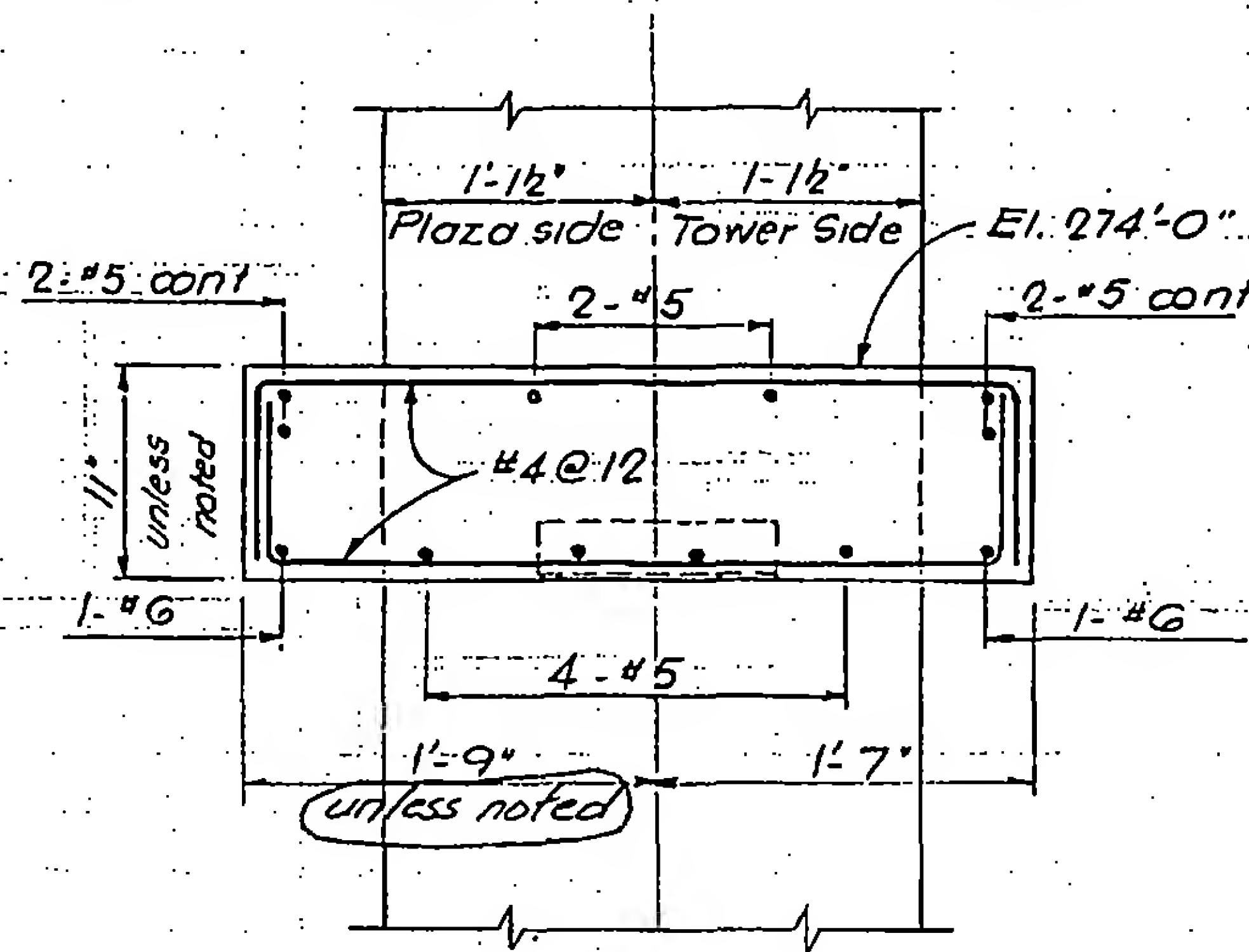
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Gen. Revision
1-22-69

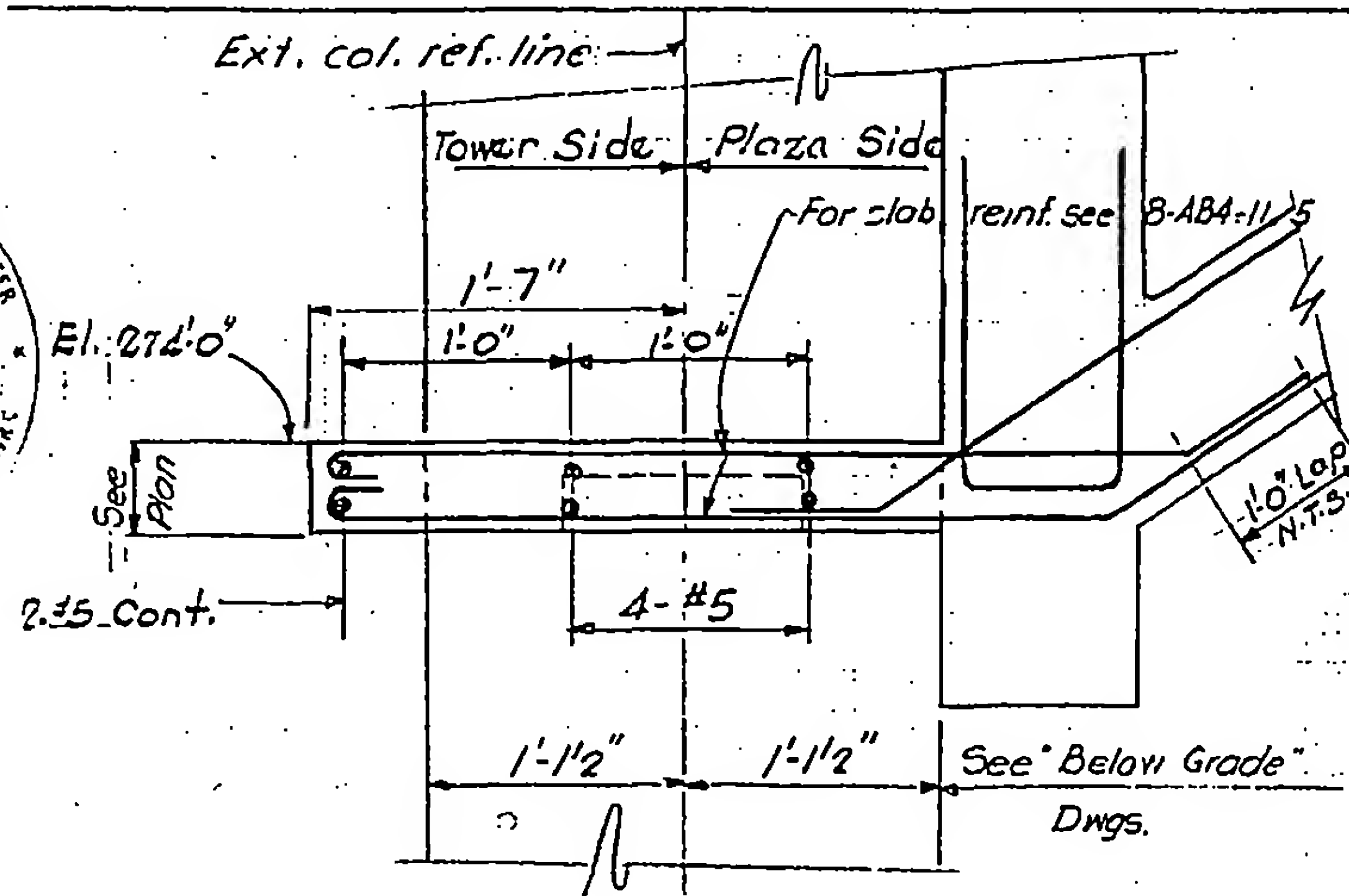
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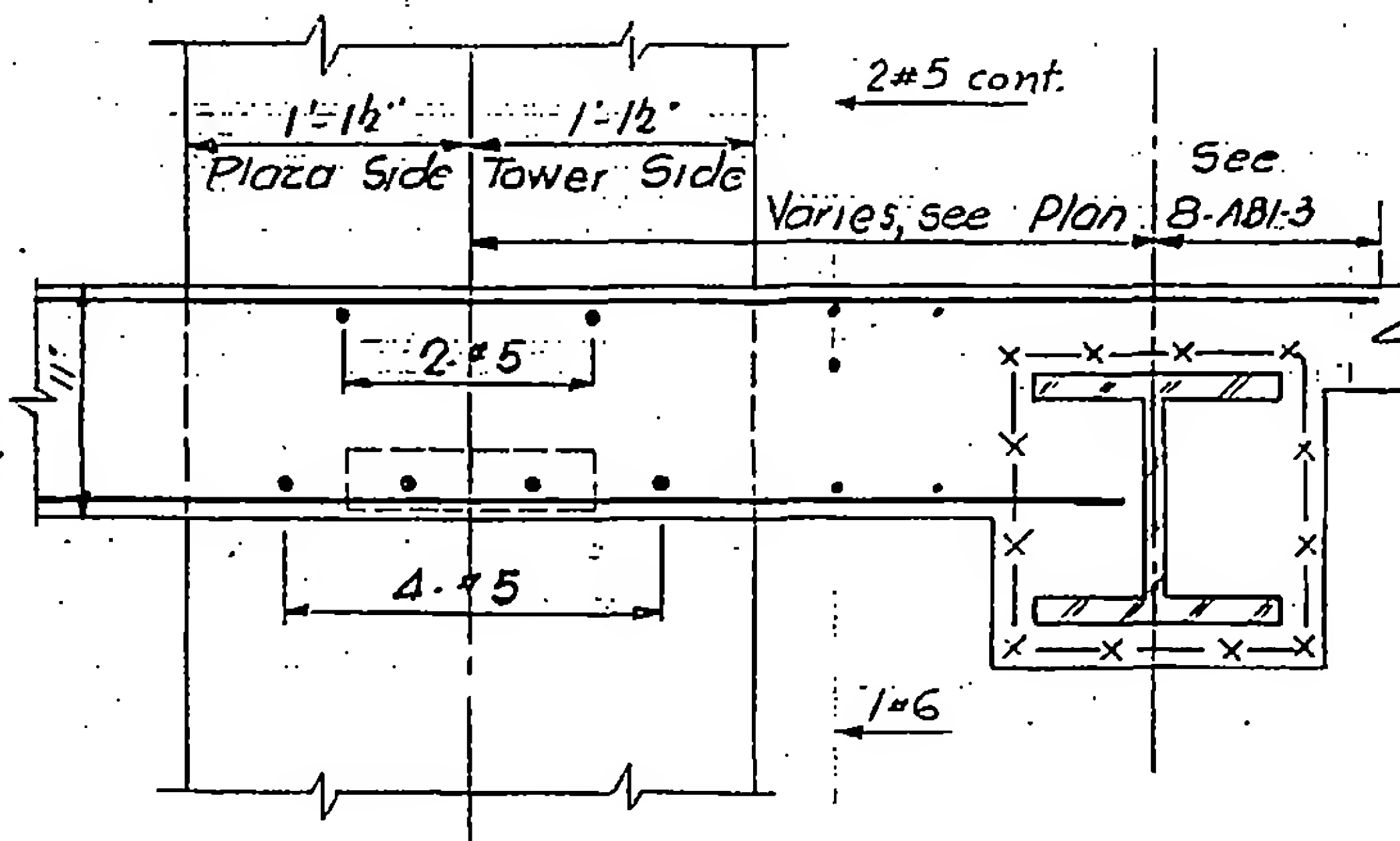
Section E-E



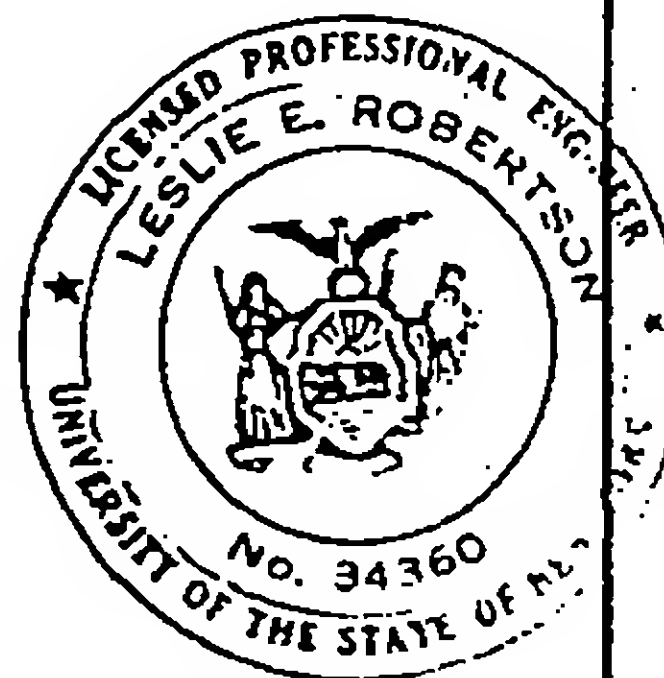
Section G-G



Section F-F



Section H-H



8-AB4-11.2

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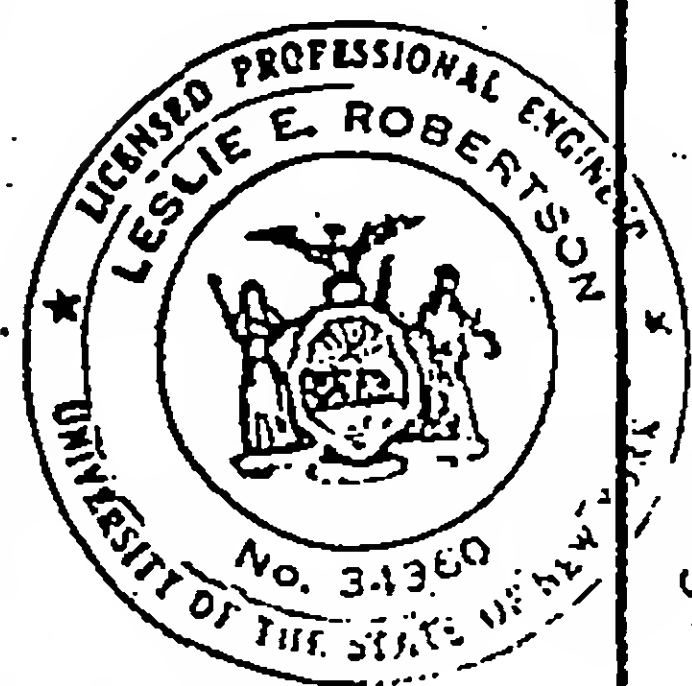
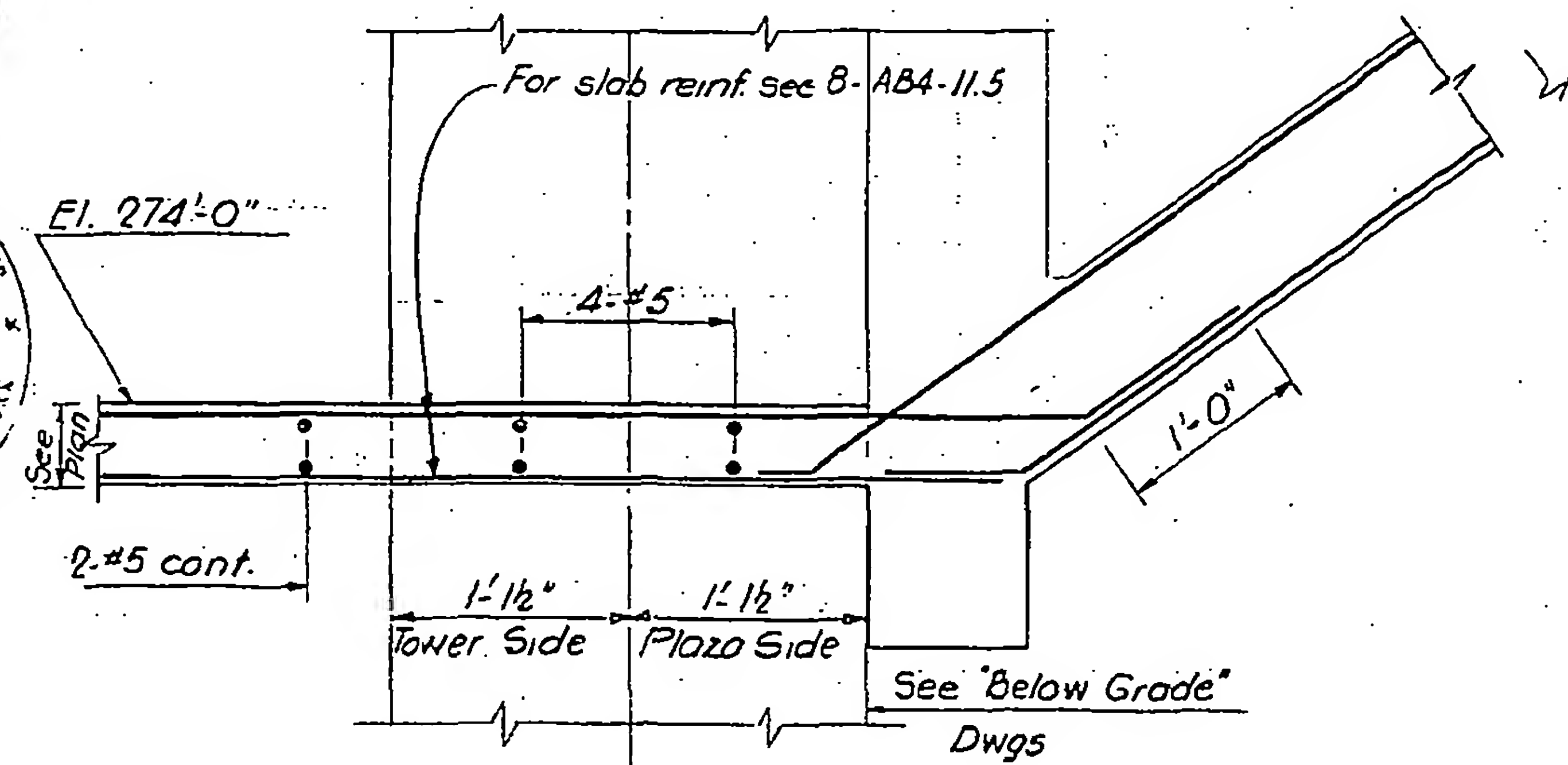
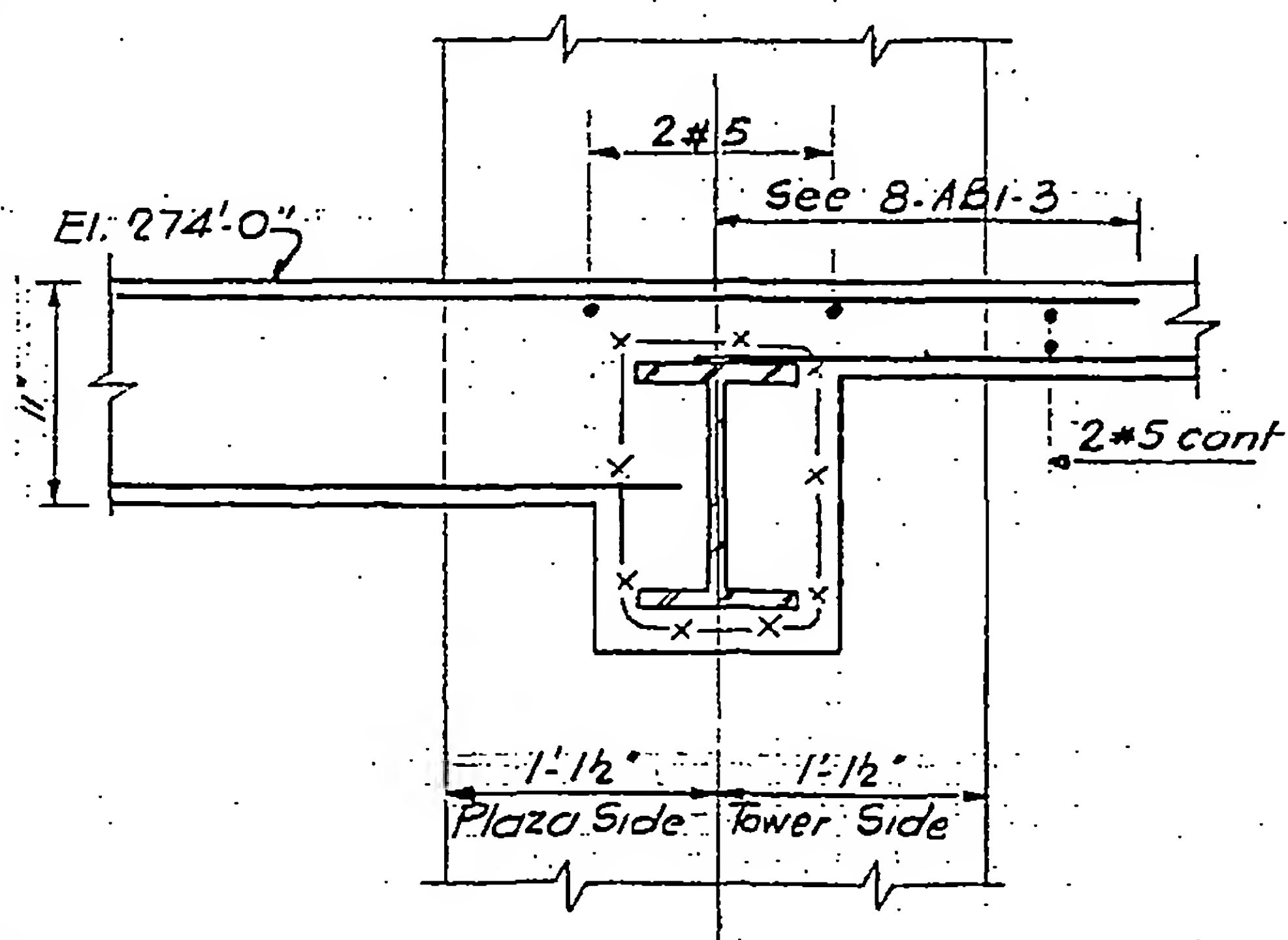
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUB-LEVEL #2 EL. 274'-0"

DATE 5-1-68

REVISIONS

1-14-69

Gen. Revision
1-22-69

8-AB4-11.3

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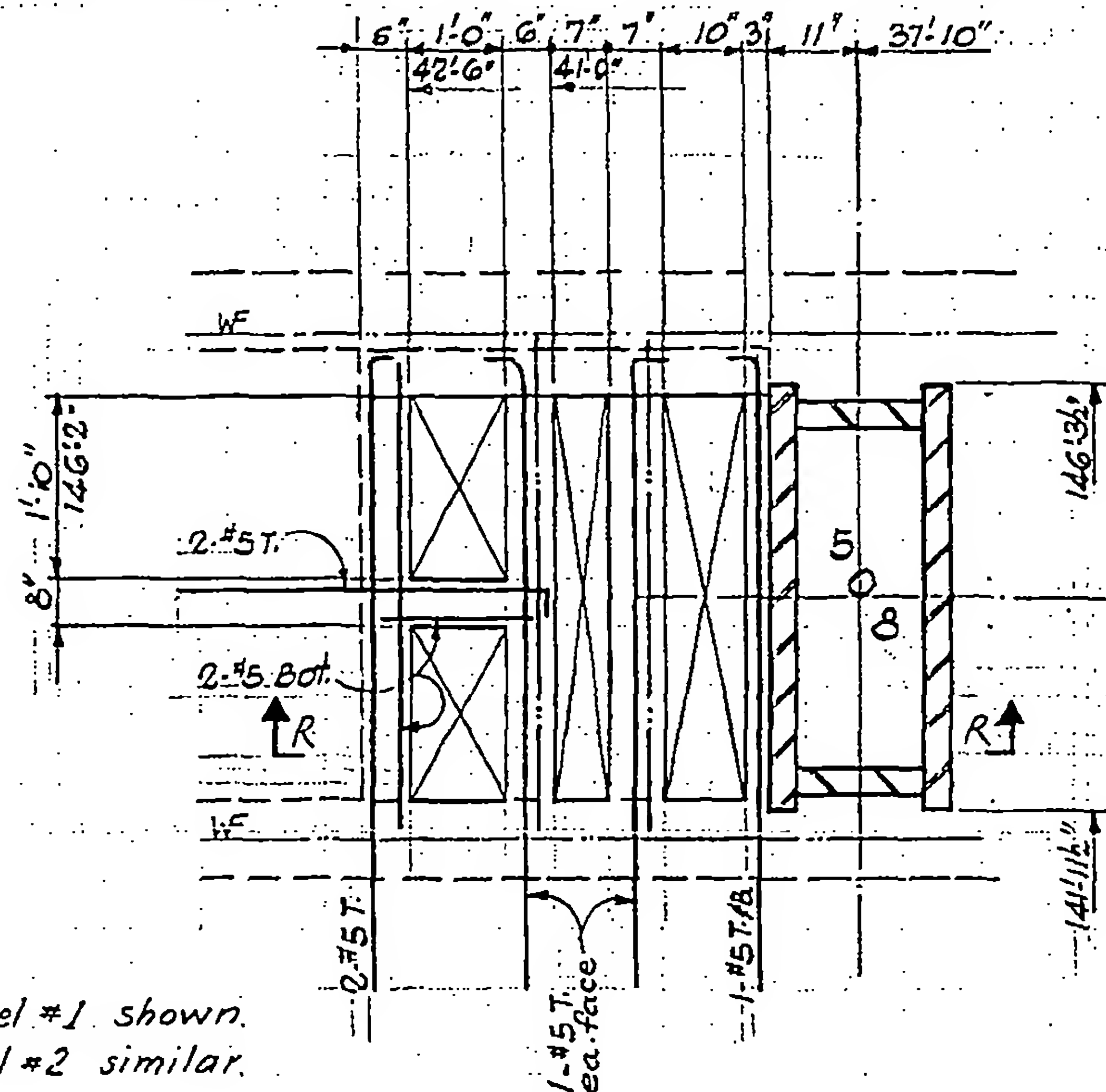
TITLE DETAILS AT SUBLEVELS #1 & #2, EL. 274' & EL. 284'

DATE 5-1-68

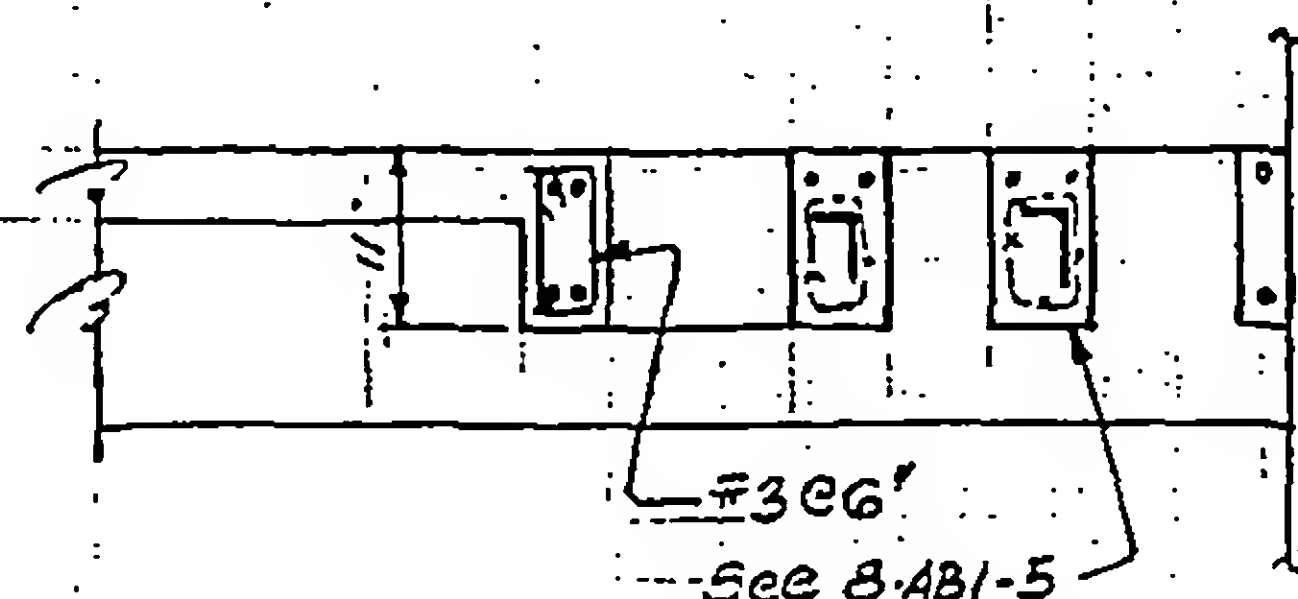
REVISIONS

8-20-68

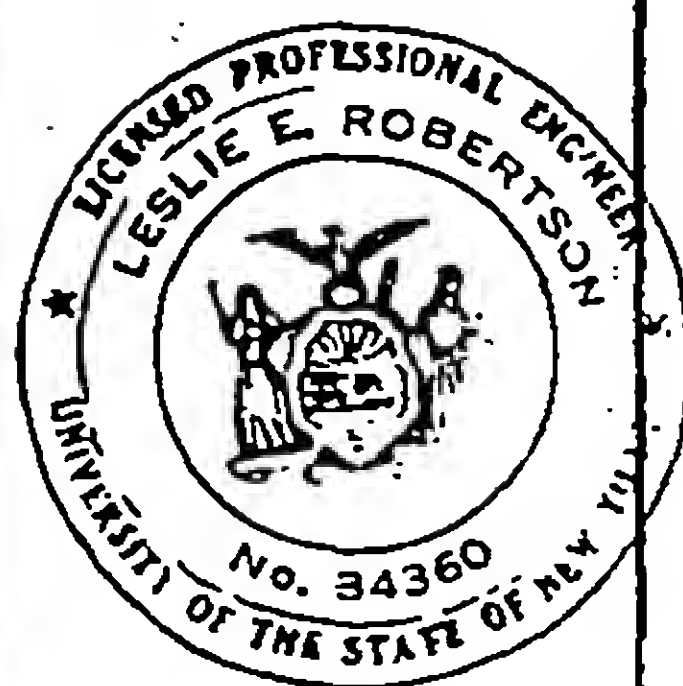
1-14-69



Detail Plan S



Section R-R



8-AB4-11.4

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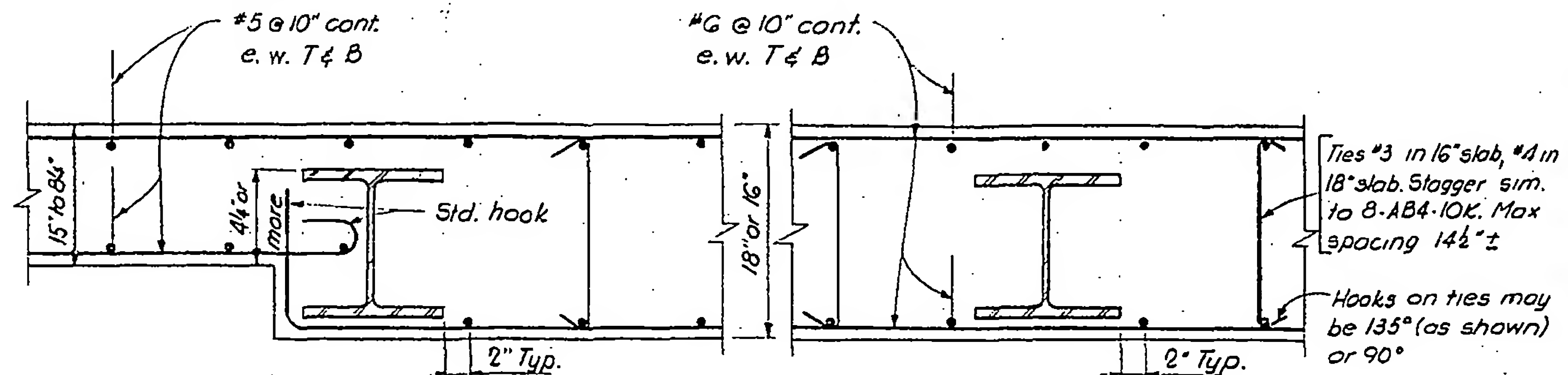
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUB-LEVEL #1 & #2, EL. 274'-0" & 284'-0"

DATE 1-14-69

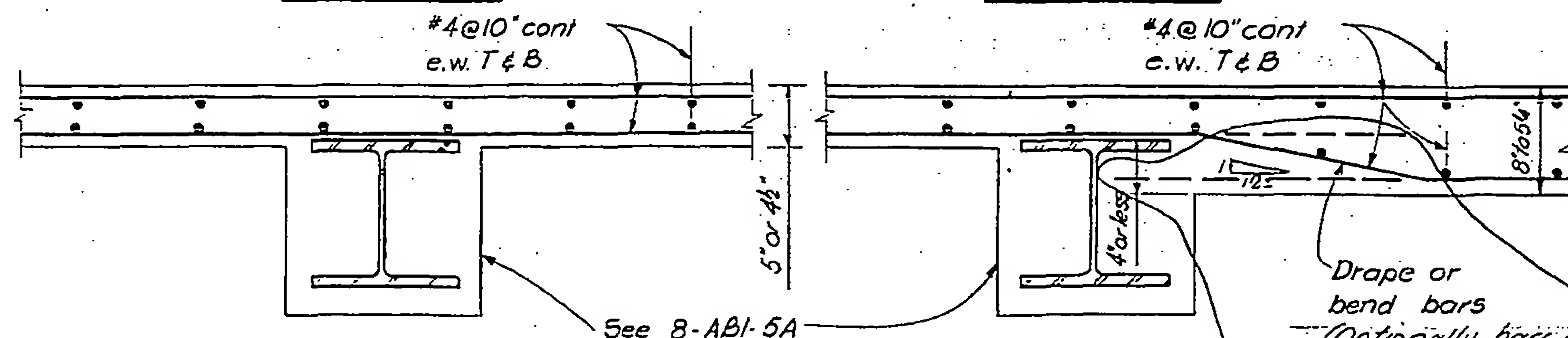
REVISIONS

1-22-69
1-28-69
5-9-69
6-3-69



Section T-T

Section U-U

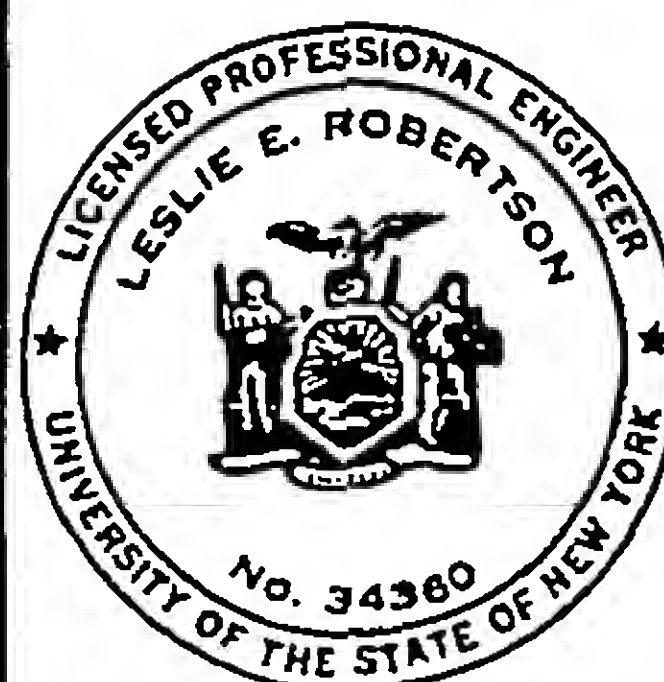


Section W-W

Section V-V

Notes:

1. Place bott. bars running in direction of span in the lowest layer, top bars in direction of span in the highest layer, except as shown in Tower Periphery Sections
2. Splice top bars by lapping at midspan, bott. bars - over a support. For required length of lap see 8-AB1-3.2
3. Reinf. shown above is the minimum amount. Provide heavier reinf. where called for.
4. Provide ties (as shown in Sect. U-U) in all slabs where reinforcing heavier than typical is called for. Size of ties: #3 for 11 1/4"-15" slabs, #2 for 11" or thinner slabs
5. In slabs 12" or thicker, or where trim bars #6 or heavier are indicated, use Det. 8-AB4-9C for trim bars at opngs.



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8-AB4-11.5

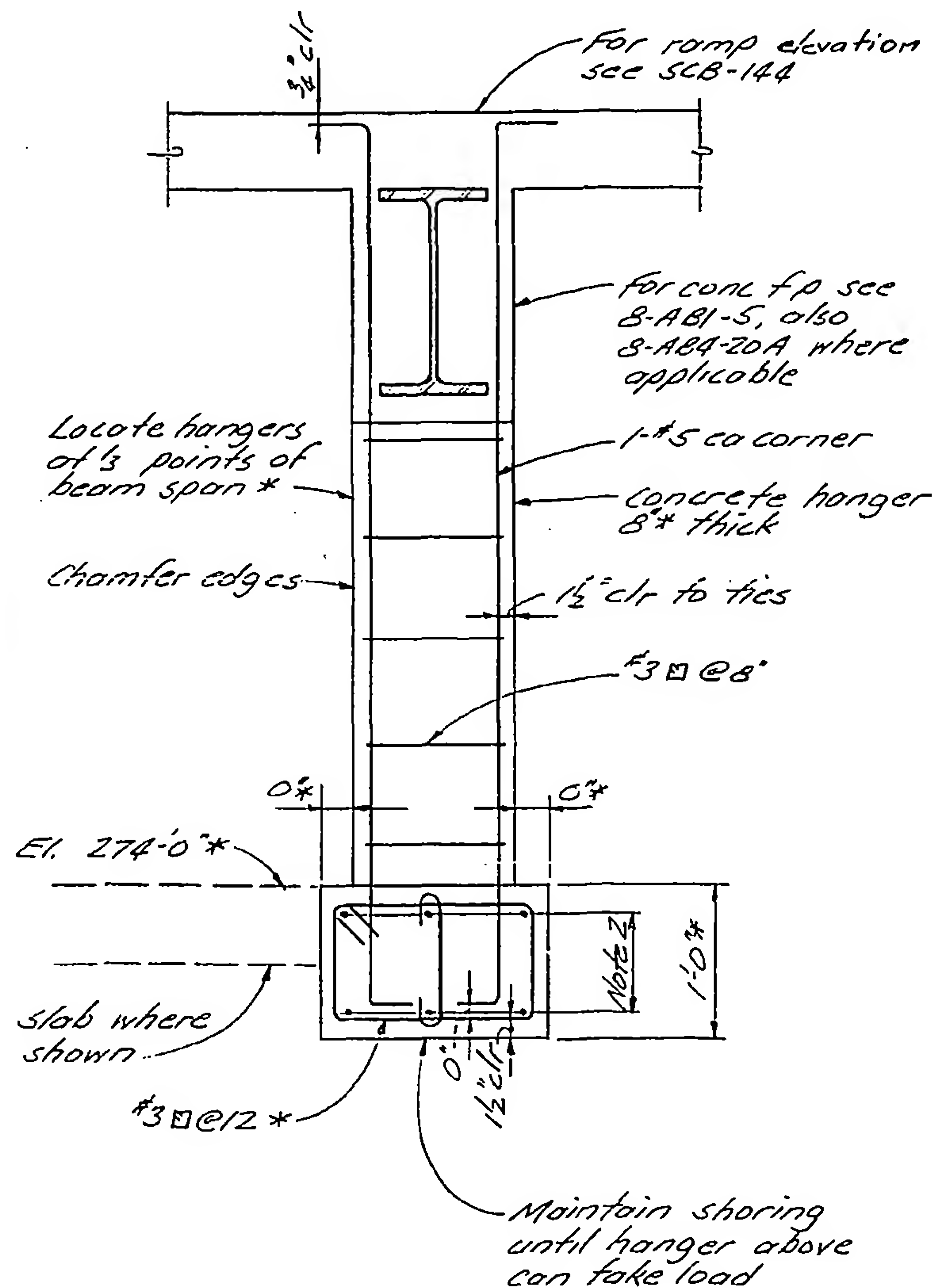
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PROJECT THE WORLD TRADE CENTER

TITLE *SECTIONS AT SUBLEVELS '18'2, EL 274' & 284'*

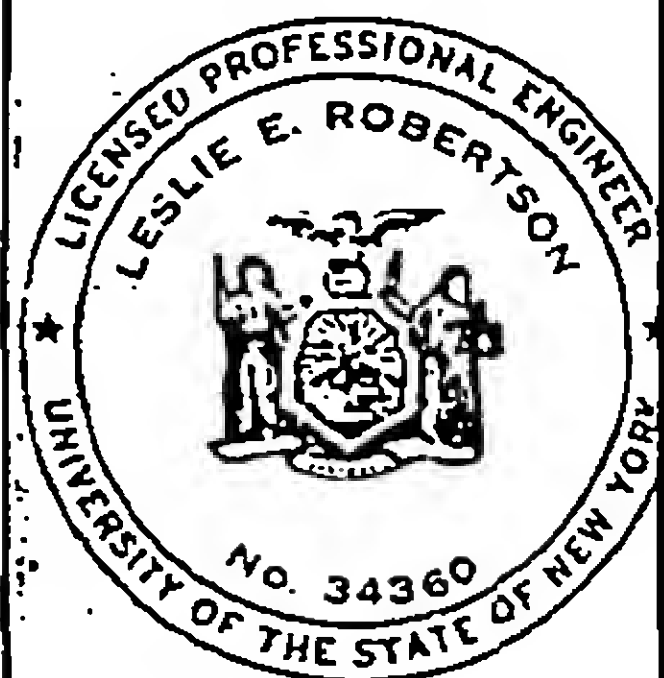
DATE 8-5-69

REVISIONS



Notes:

1. Asterisk (*) means "unless otherwise shown."
2. For reinforcing not shown see plans and Dwg SCB-144



ORIGIN

BROWN

REVIEWED

SECTION Y-Y

8-AB4-11.6

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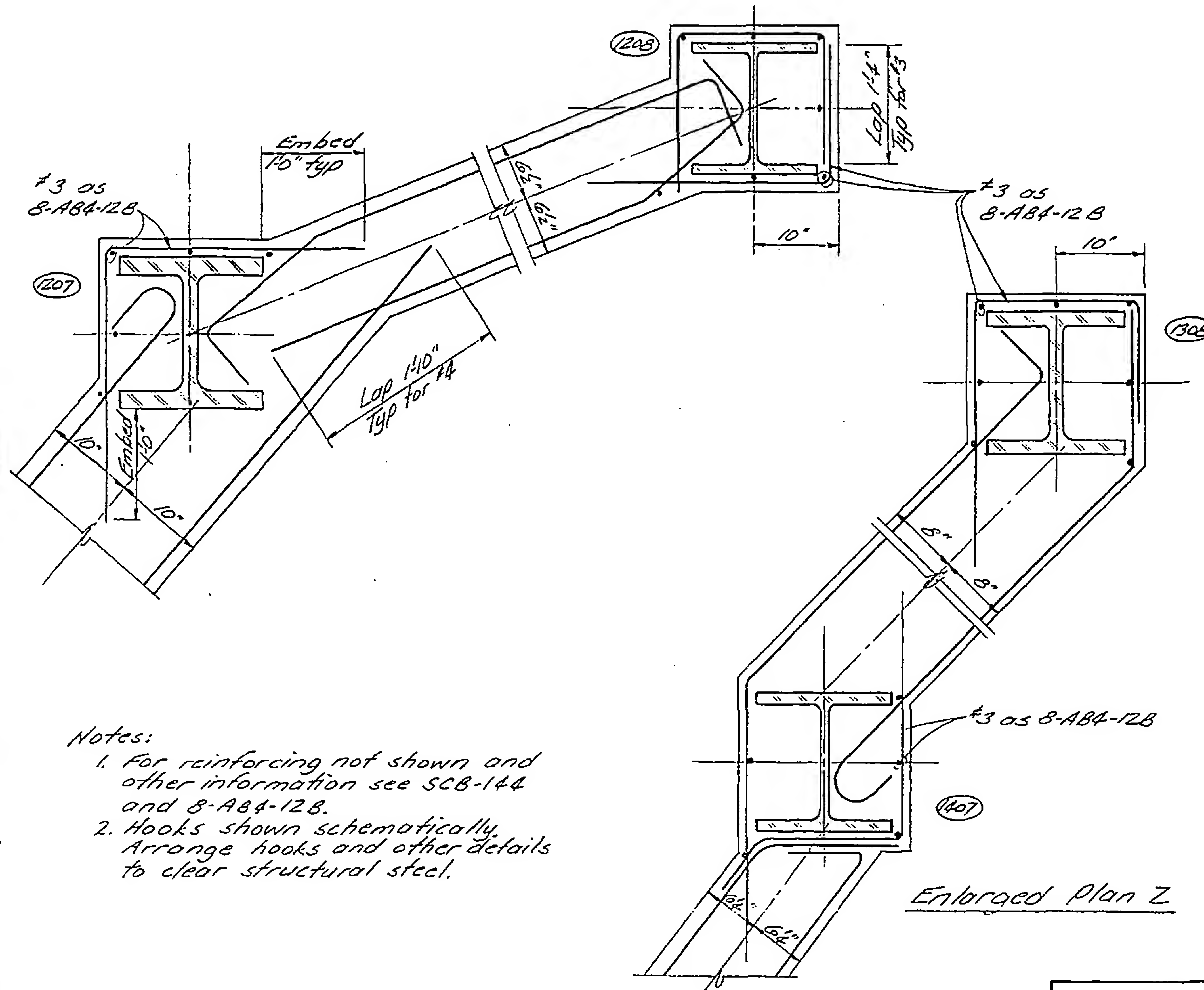
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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUBLEVELS #1 & #2 EL 274' & 284'

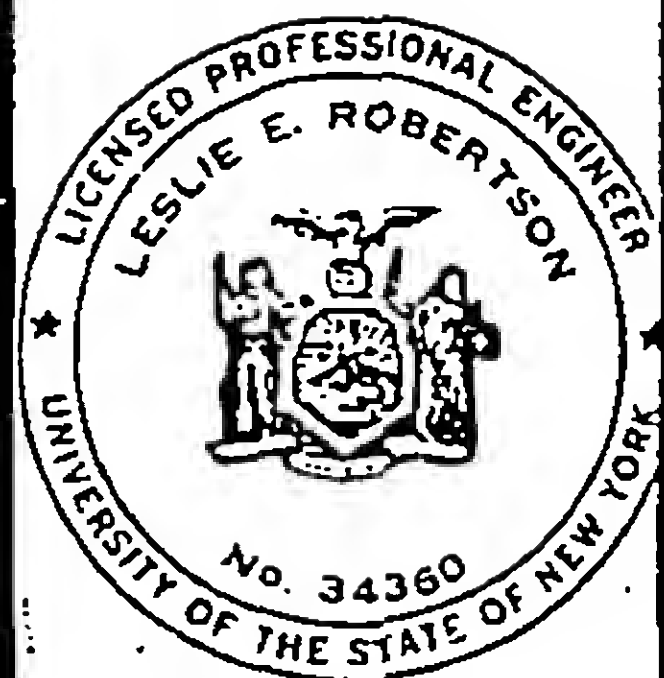
DATE 8-5-69

REVISIONS



Notes:

1. For reinforcing not shown and other information see SCB-144 and 8-AB4-12B.
2. Hooks shown schematically. Arrange hooks and other details to clear structural steel.



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W.A. Brewer

8-AB4-11.7

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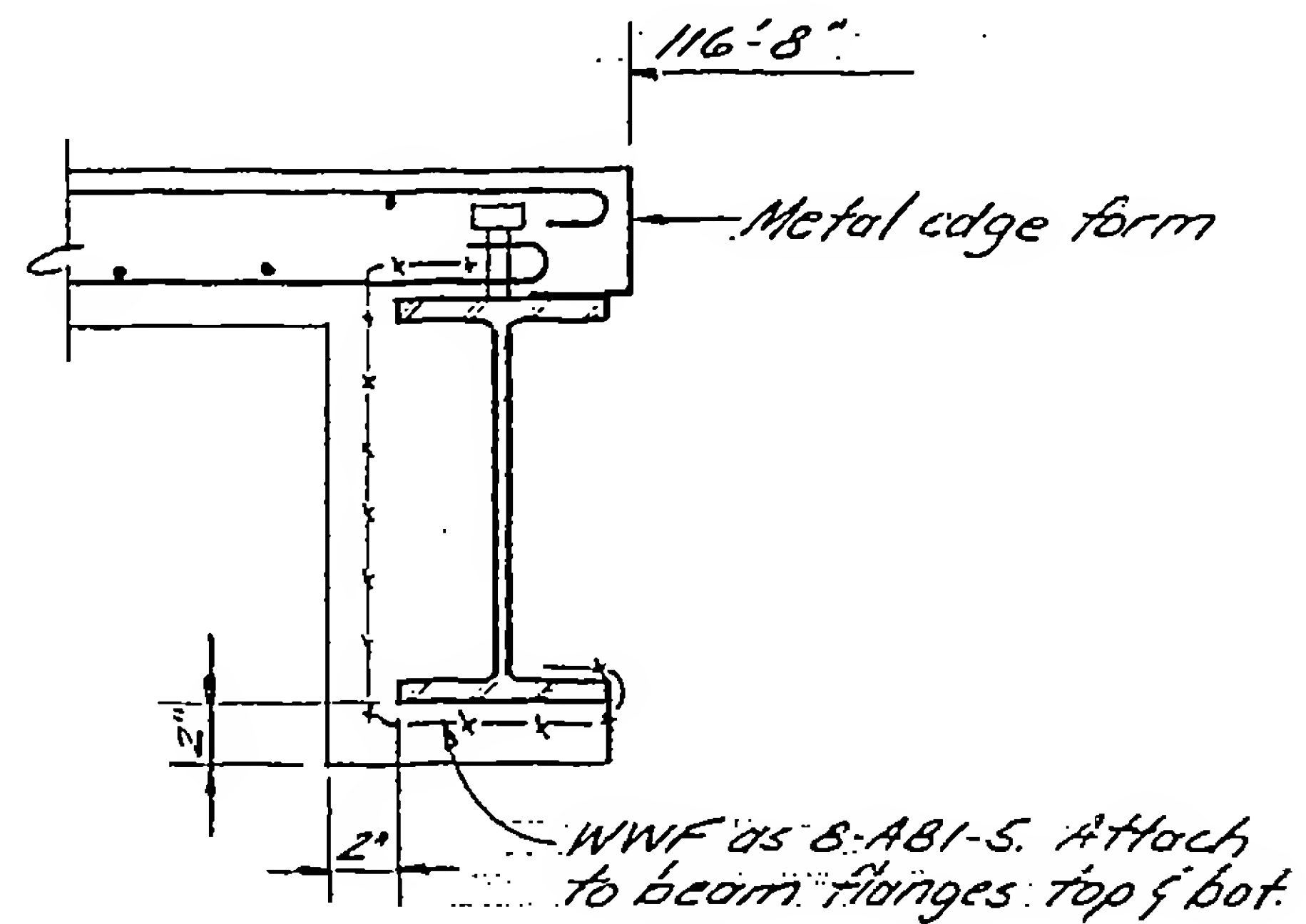
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SUBLEVEL #1, EL. 284

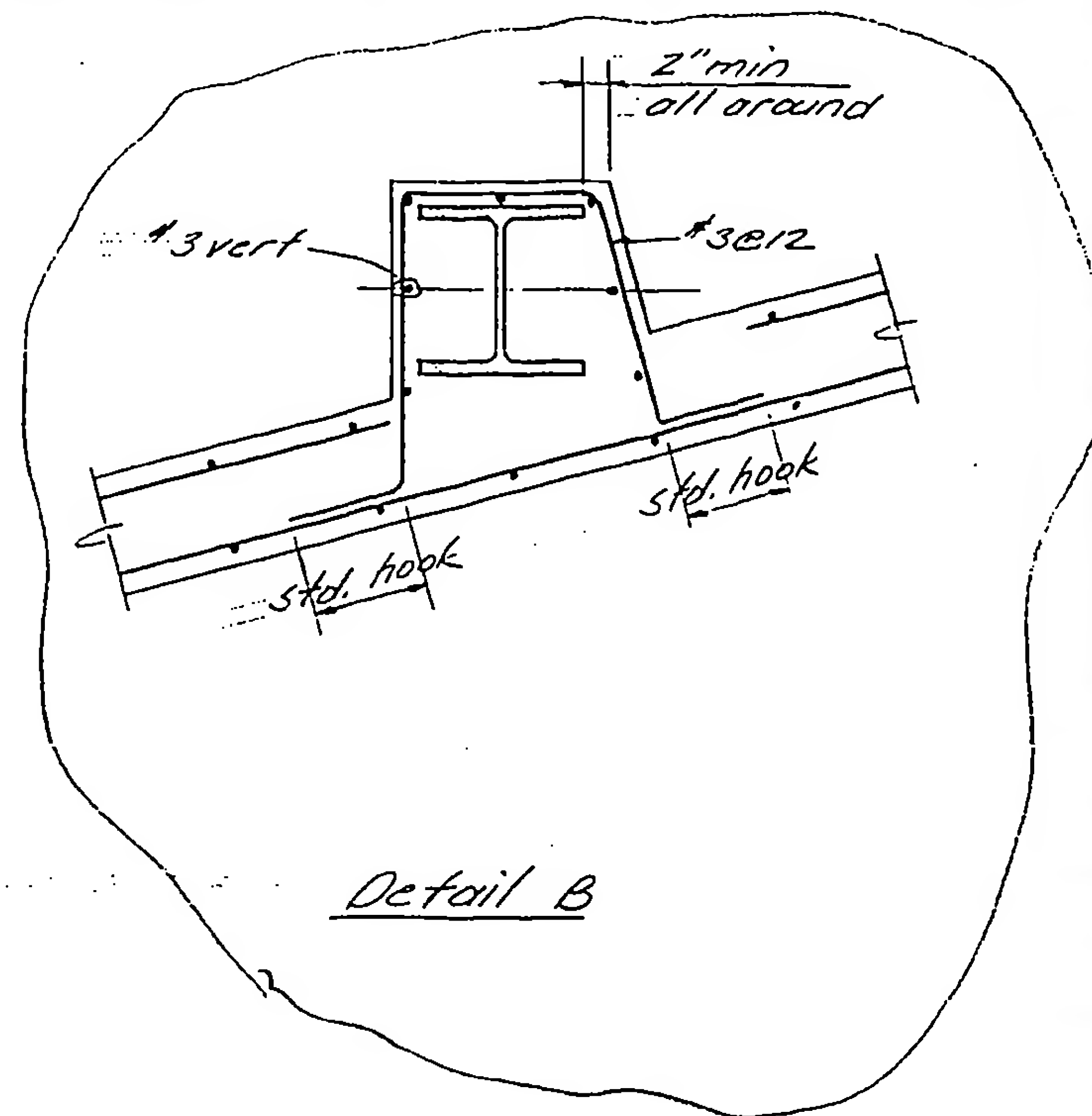
DATE 5-1-68

REVISIONS

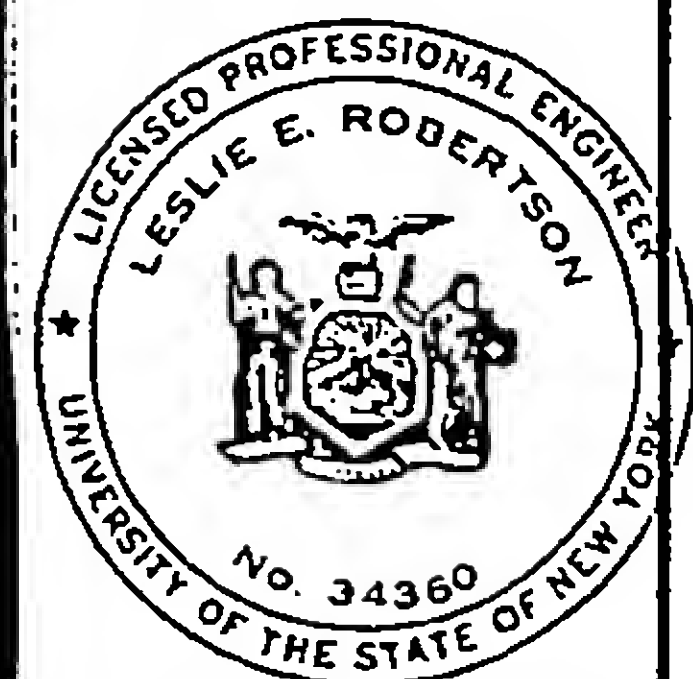
8-5-68



Section A-A



Detail B



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DRAWN

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W.A. Brewer

B:AB4-12.1

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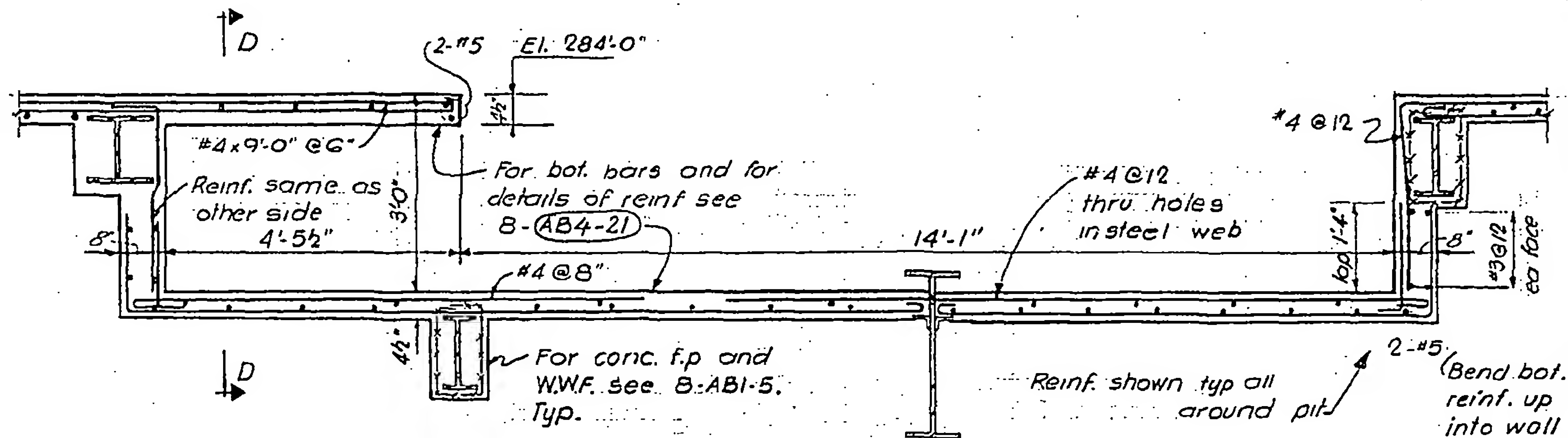
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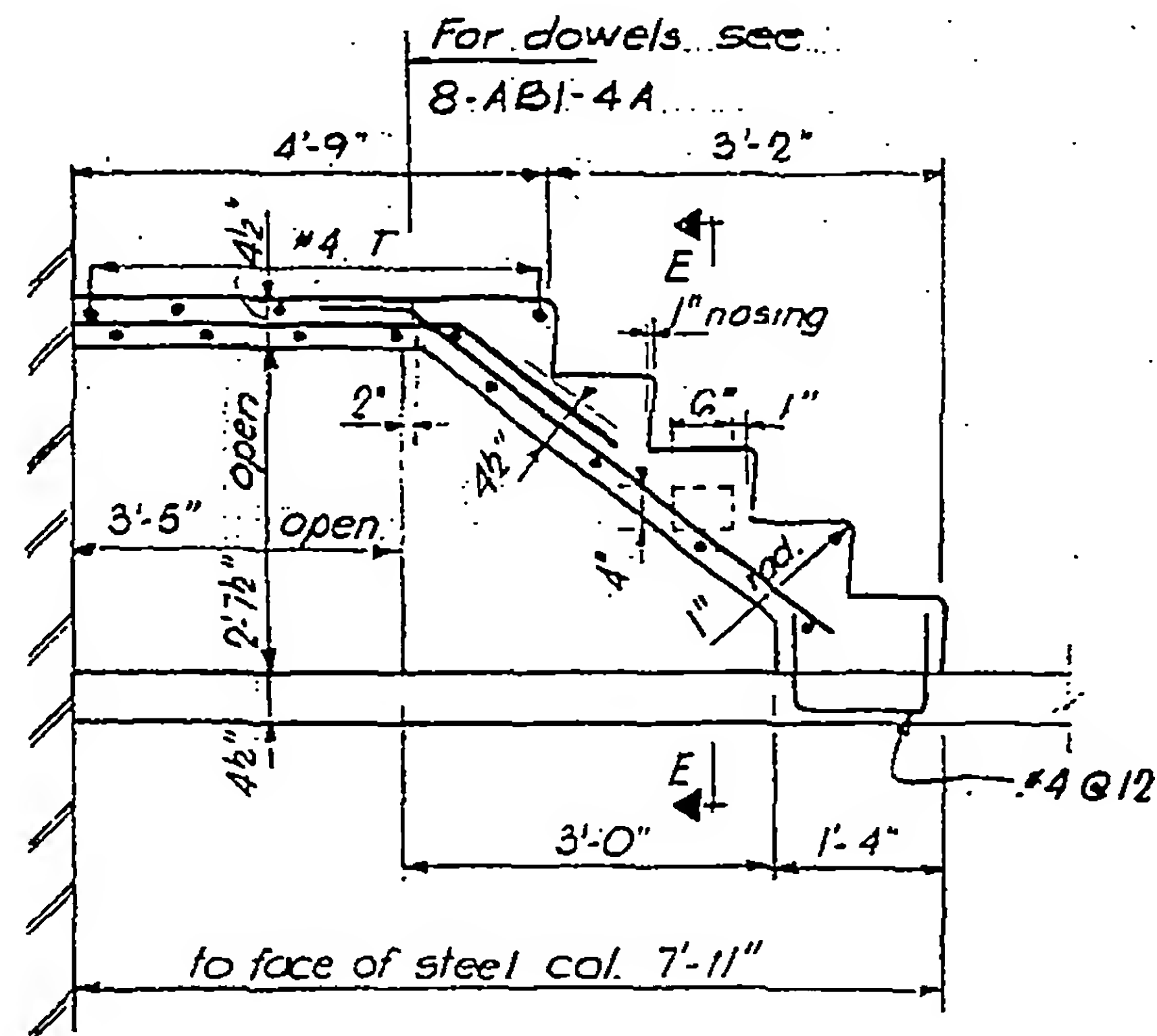
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REVISIONS

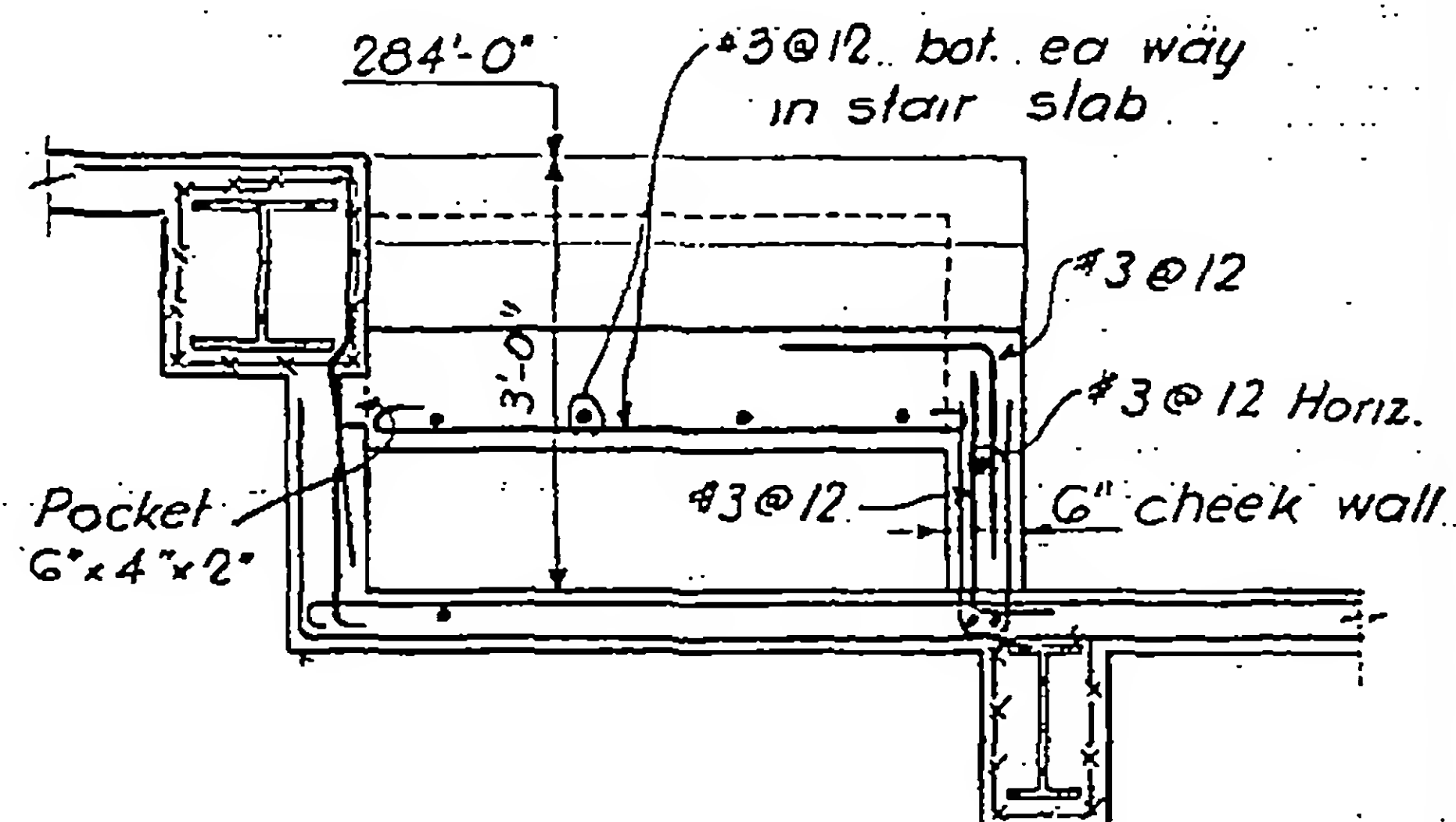
6-3-69



Section C-C



Section D-D



Section E-E



8-AB4-12.2

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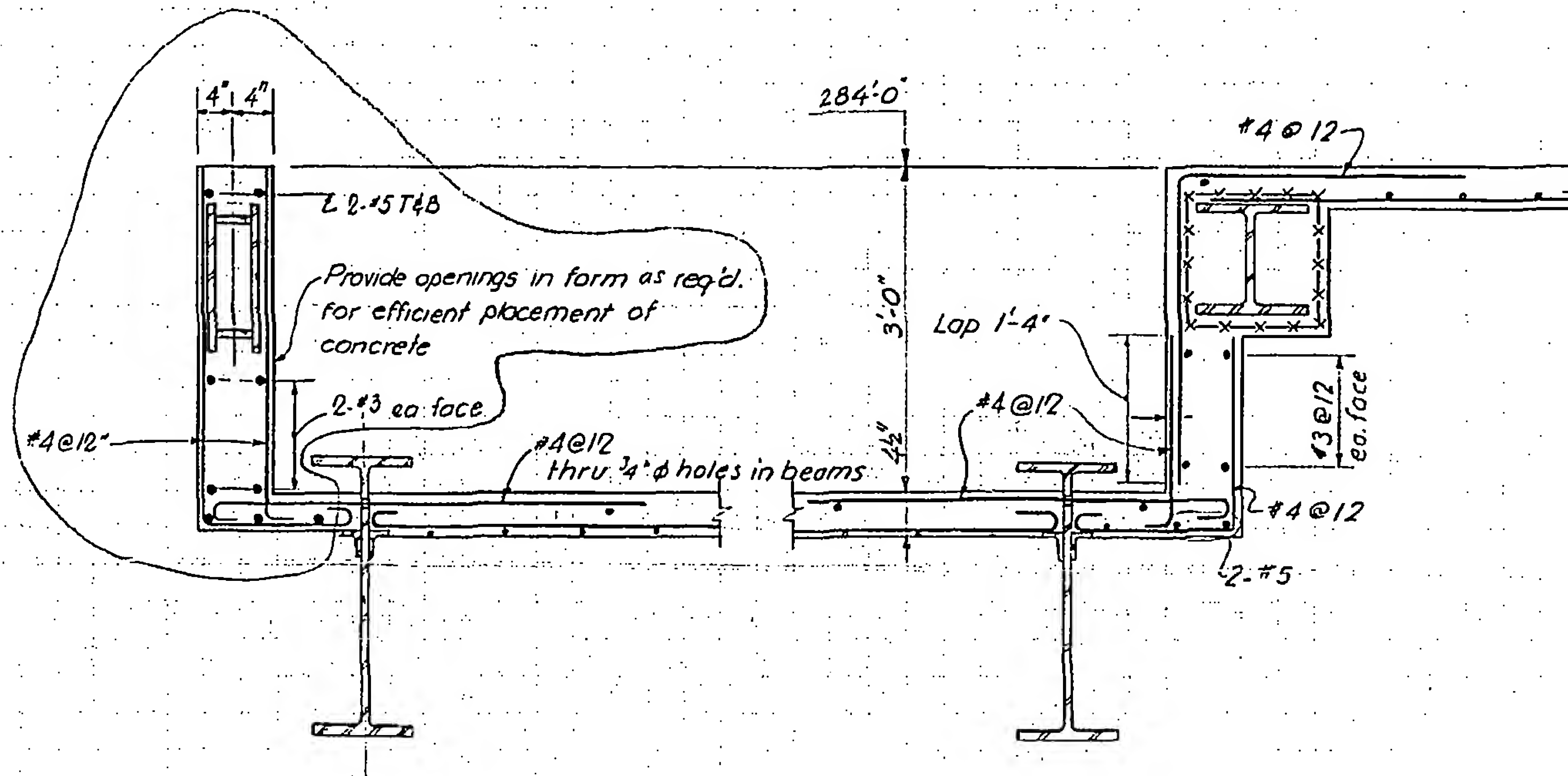
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DATE 5-1-68

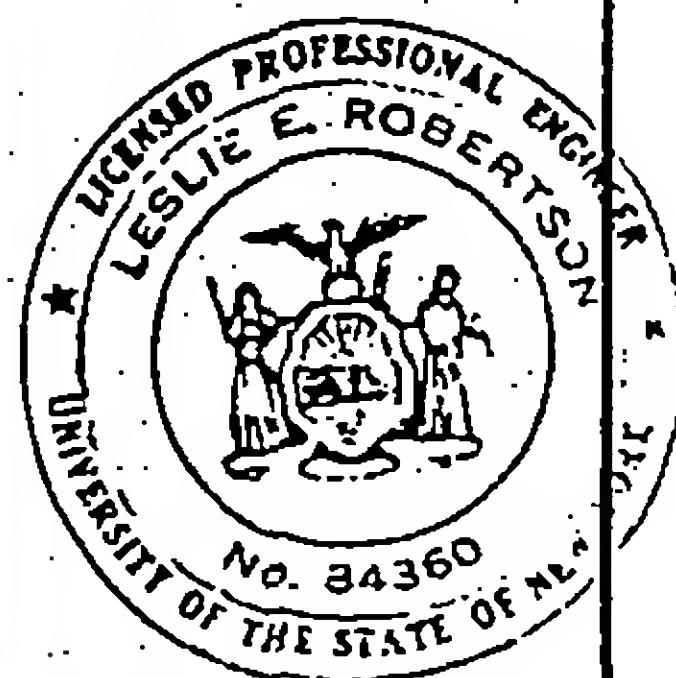
REVISIONS

1-28-69



Section F-F

Section G-G



8 AB4-12.3

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Structural & Civil Engineers

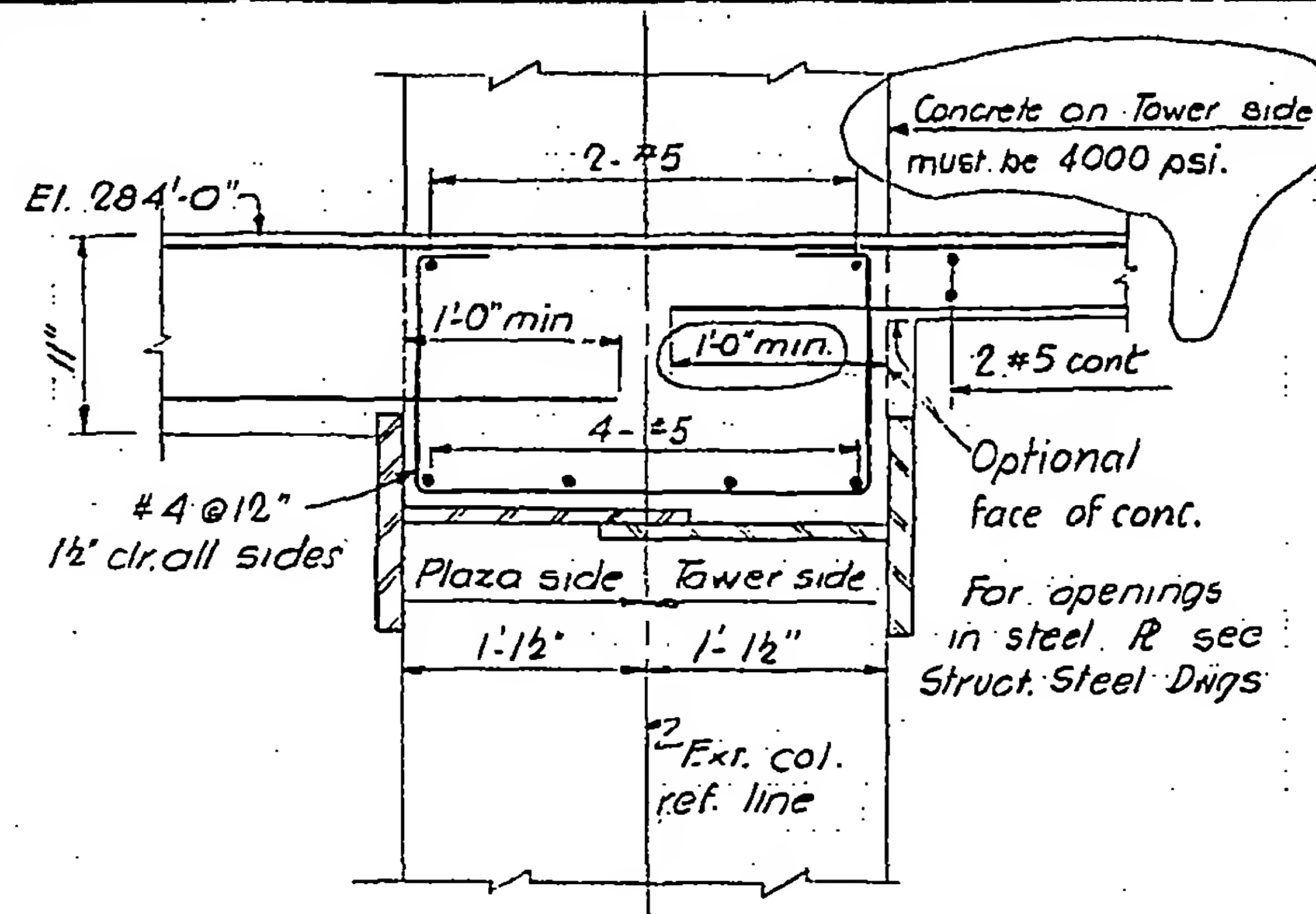
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TITLE SECTIONS AT SUB LEVEL #1, El. 284'-0"

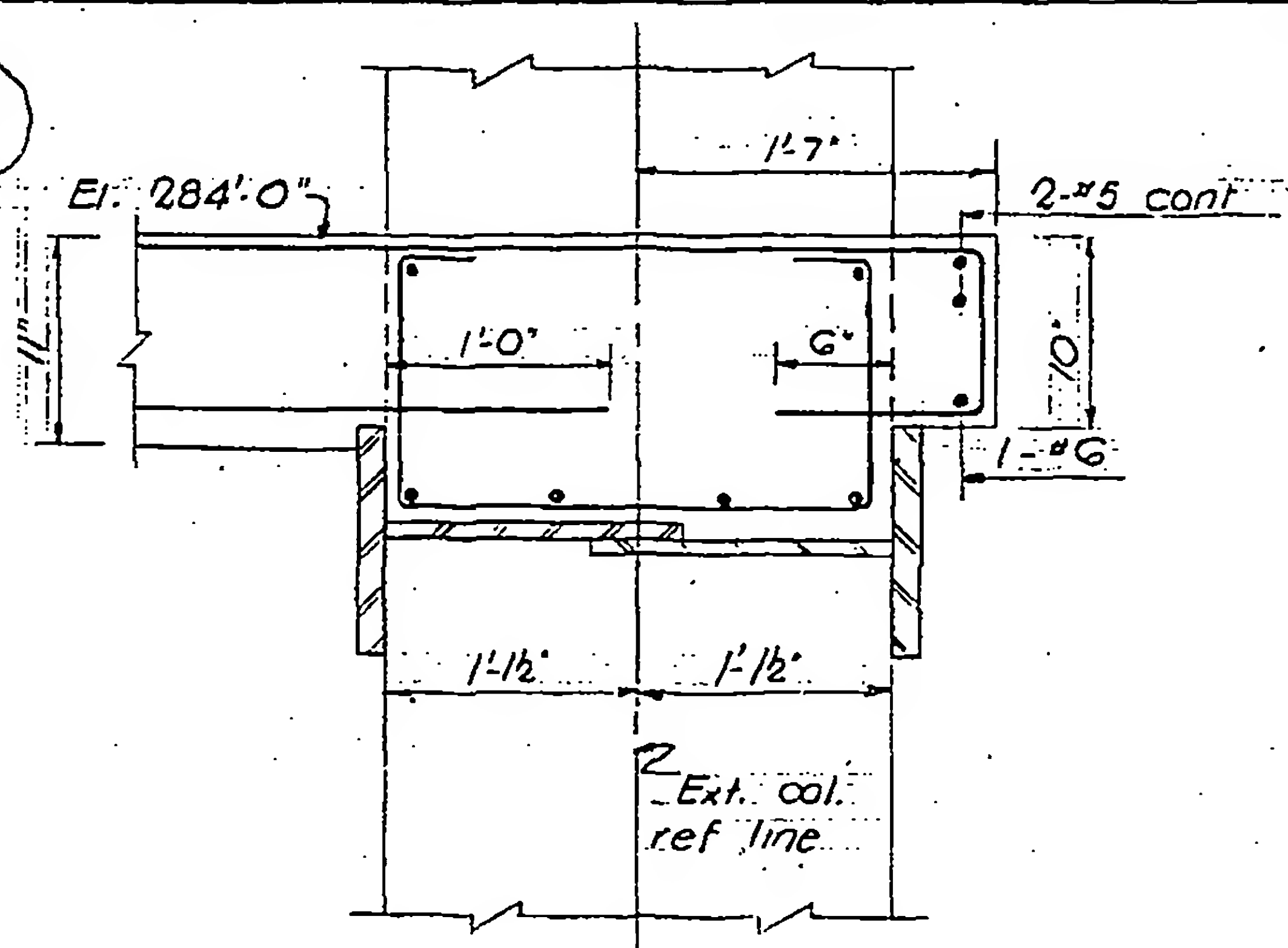
DATE 5-1-68

REVISIONS

1-28-69

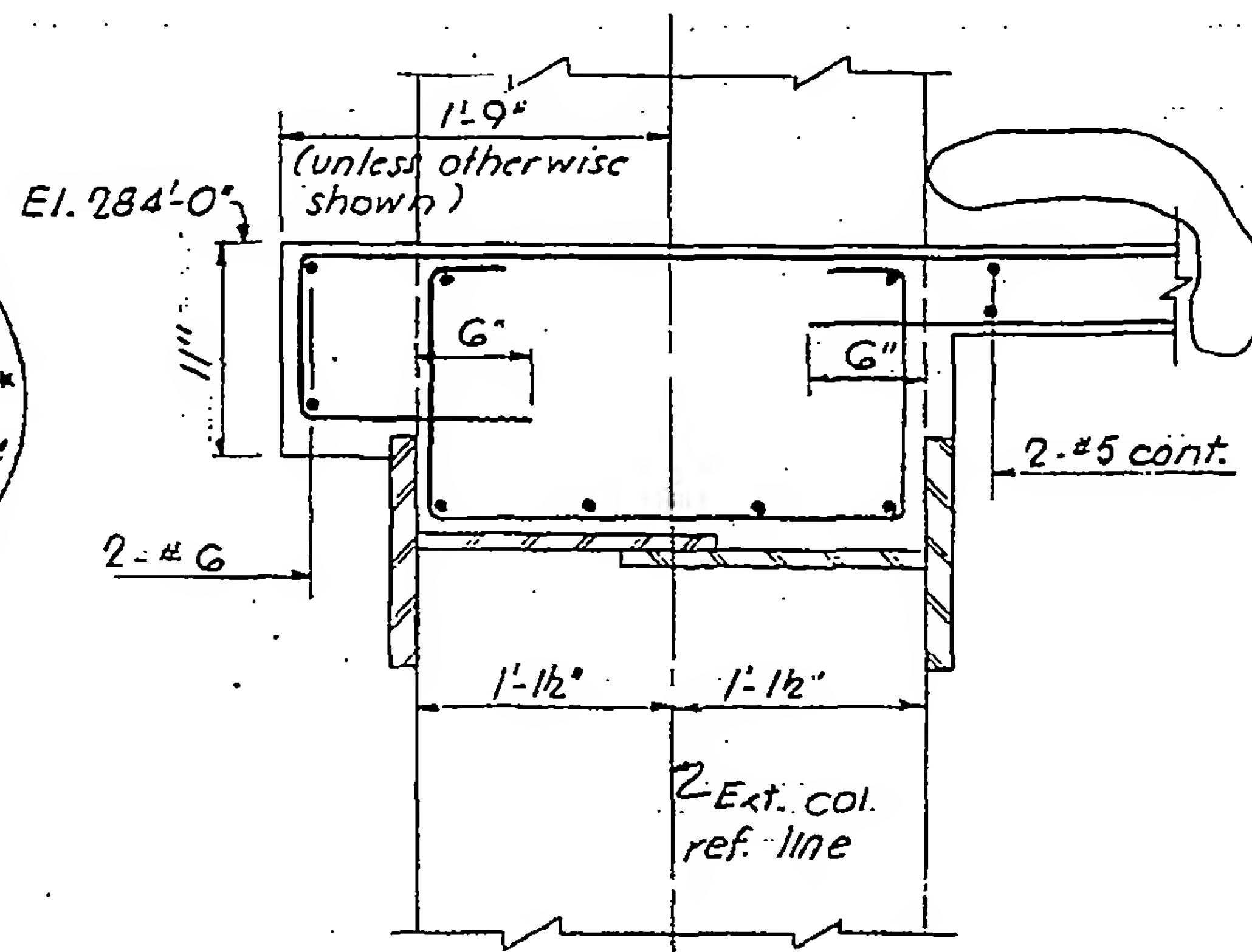


Section H-H



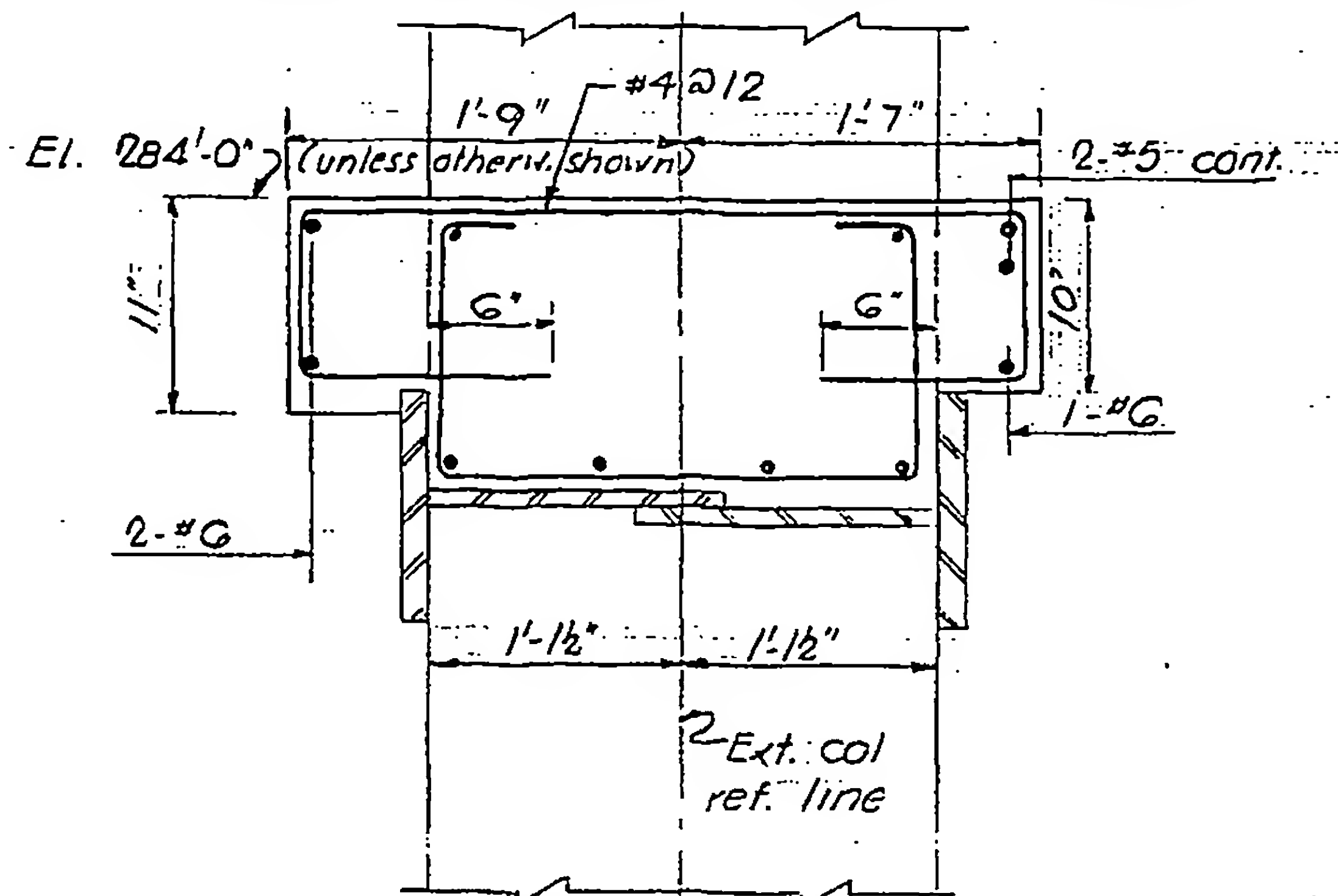
Section J-J

Same as Sect. H-H except as shown



Section K-K

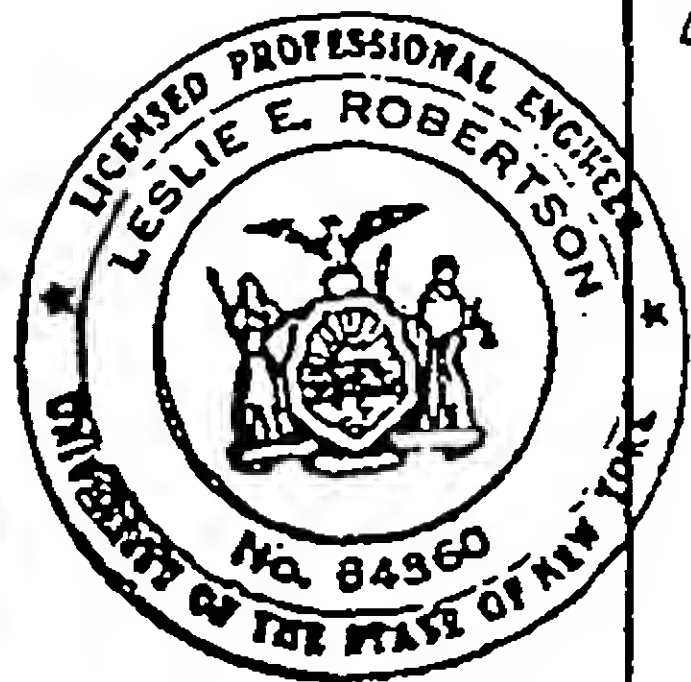
Same as Sect. H-H except as shown.



Section M-M

Same as Sect. H-H except as shown

8-AB4-12.4



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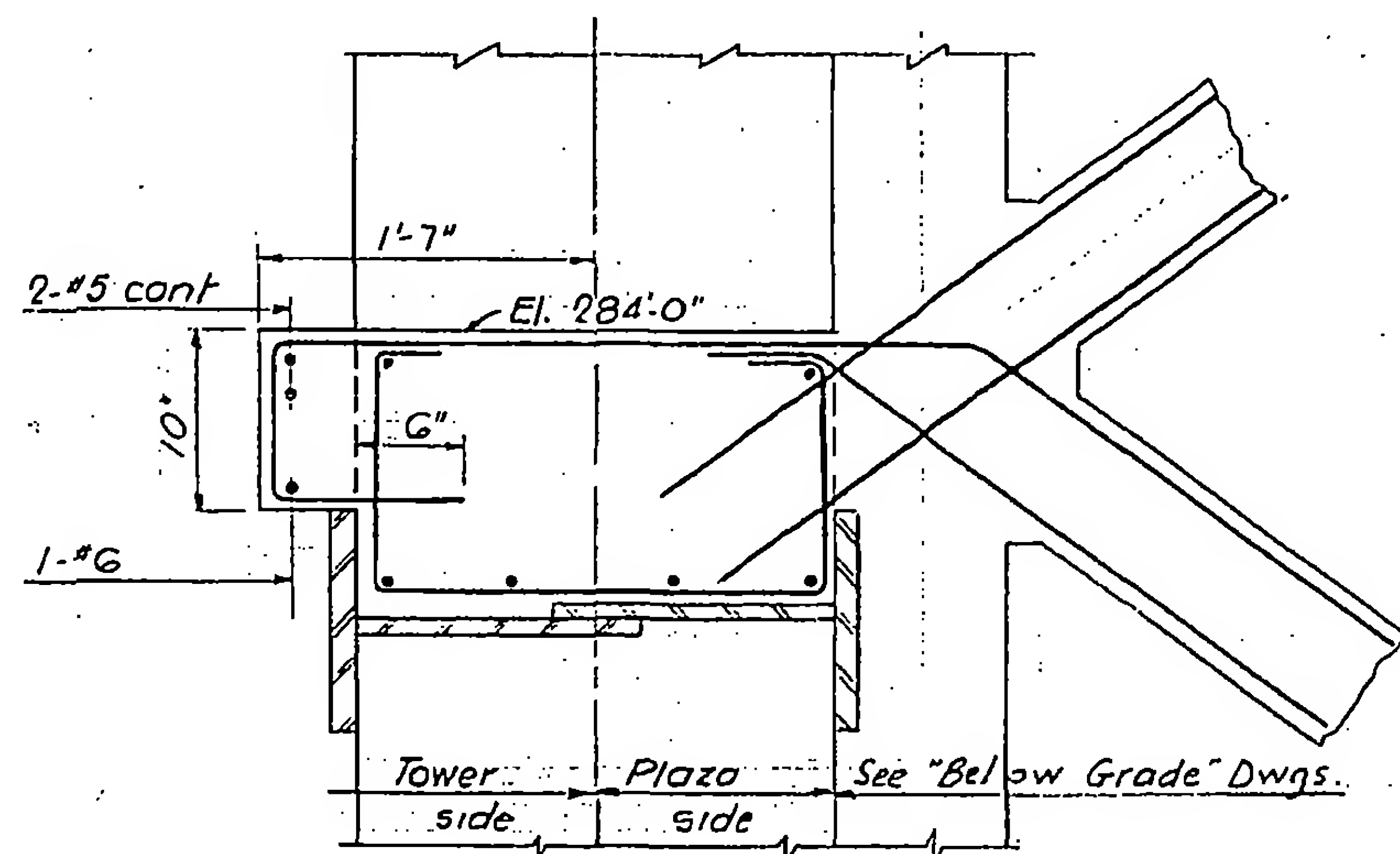
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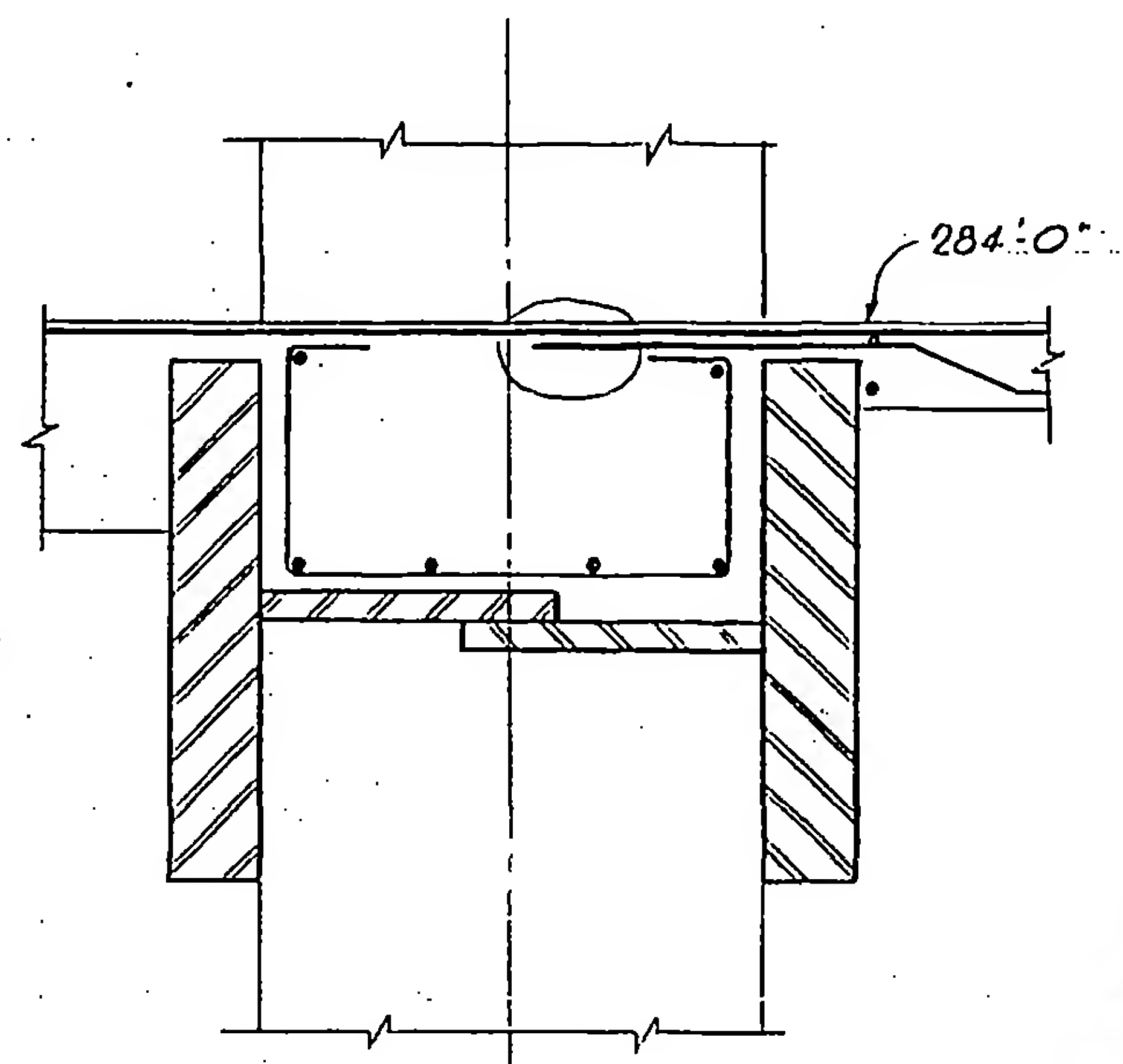
DATE 5-1-68

REVISIONS

1-28-69

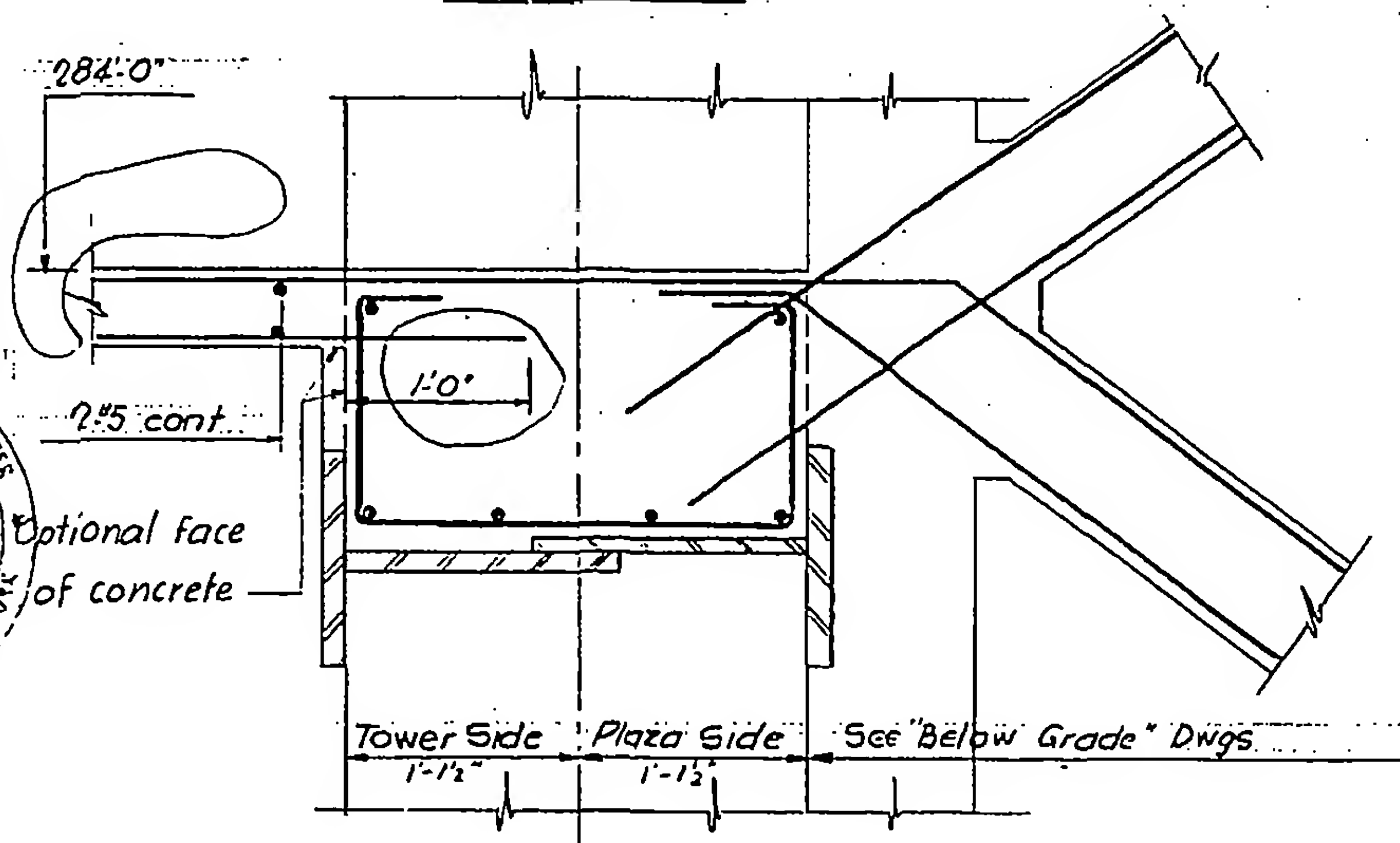


Section N-N



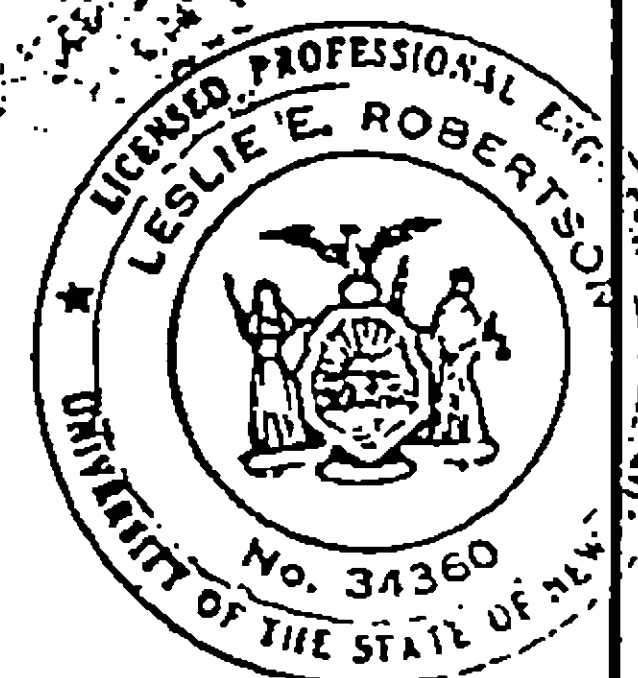
Section Q-Q

Similar to Sect. H-H on 8-AB4-12.4
except as shown



Section P-P

Sections N and P are similar to Sect. H-H on 8-AB4-12.4,
except as shown.



8-AB4-12.5

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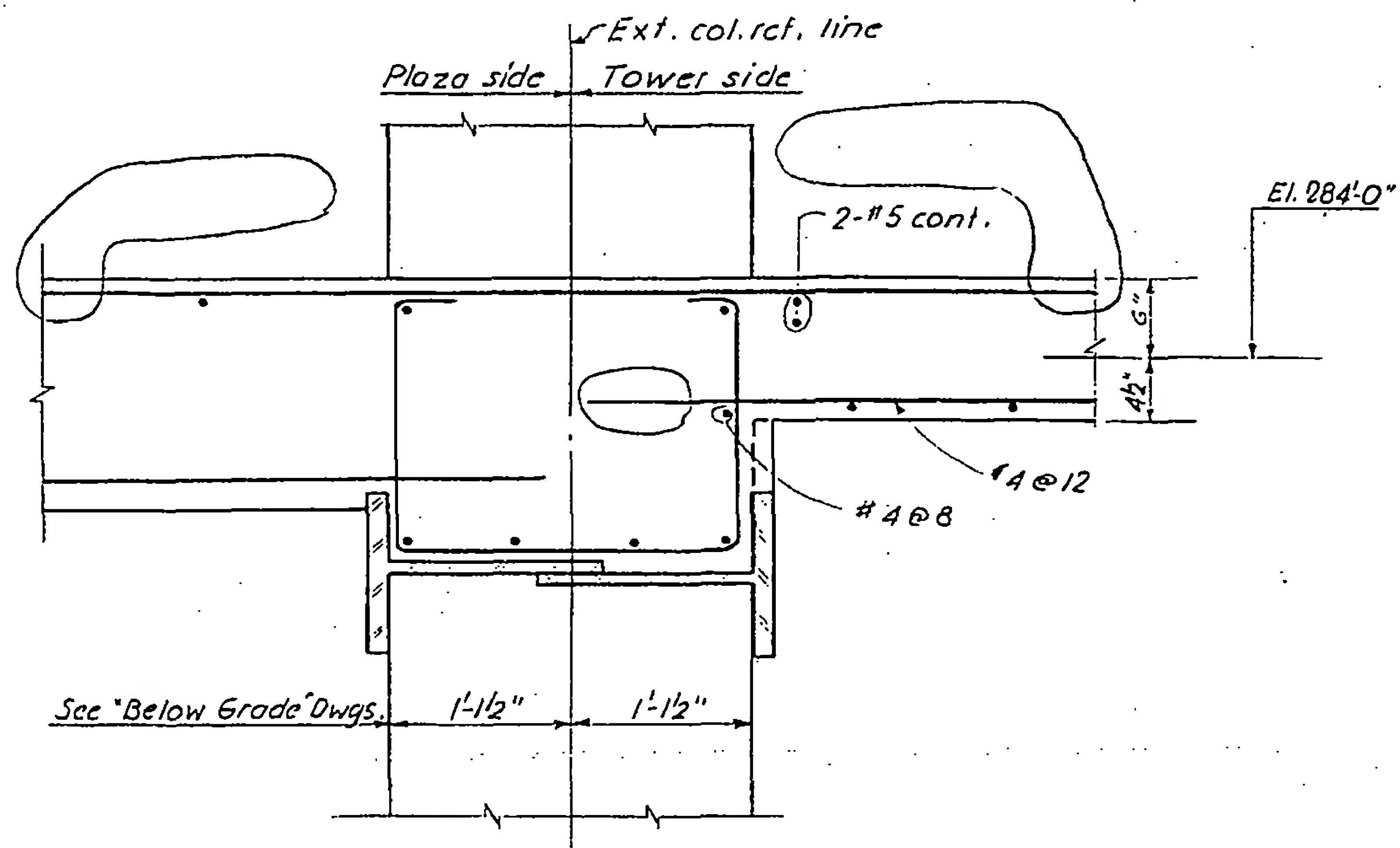
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TITLE SECTIONS AT SUB-LEVEL #1, EL. 284'-0"

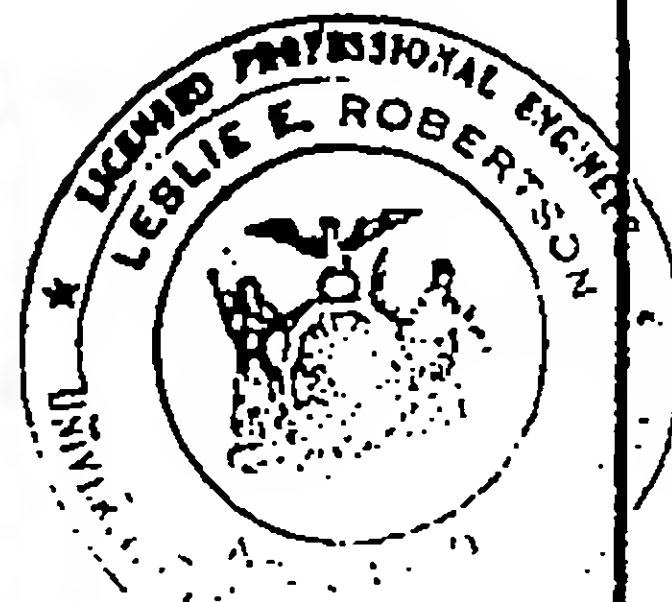
DATE 5-1-68

REVISIONS

1-28-69

Section R-R

Same as Section H-H on 8-AB4-12.4
except as otherwise shown.



8-AB4-12.6

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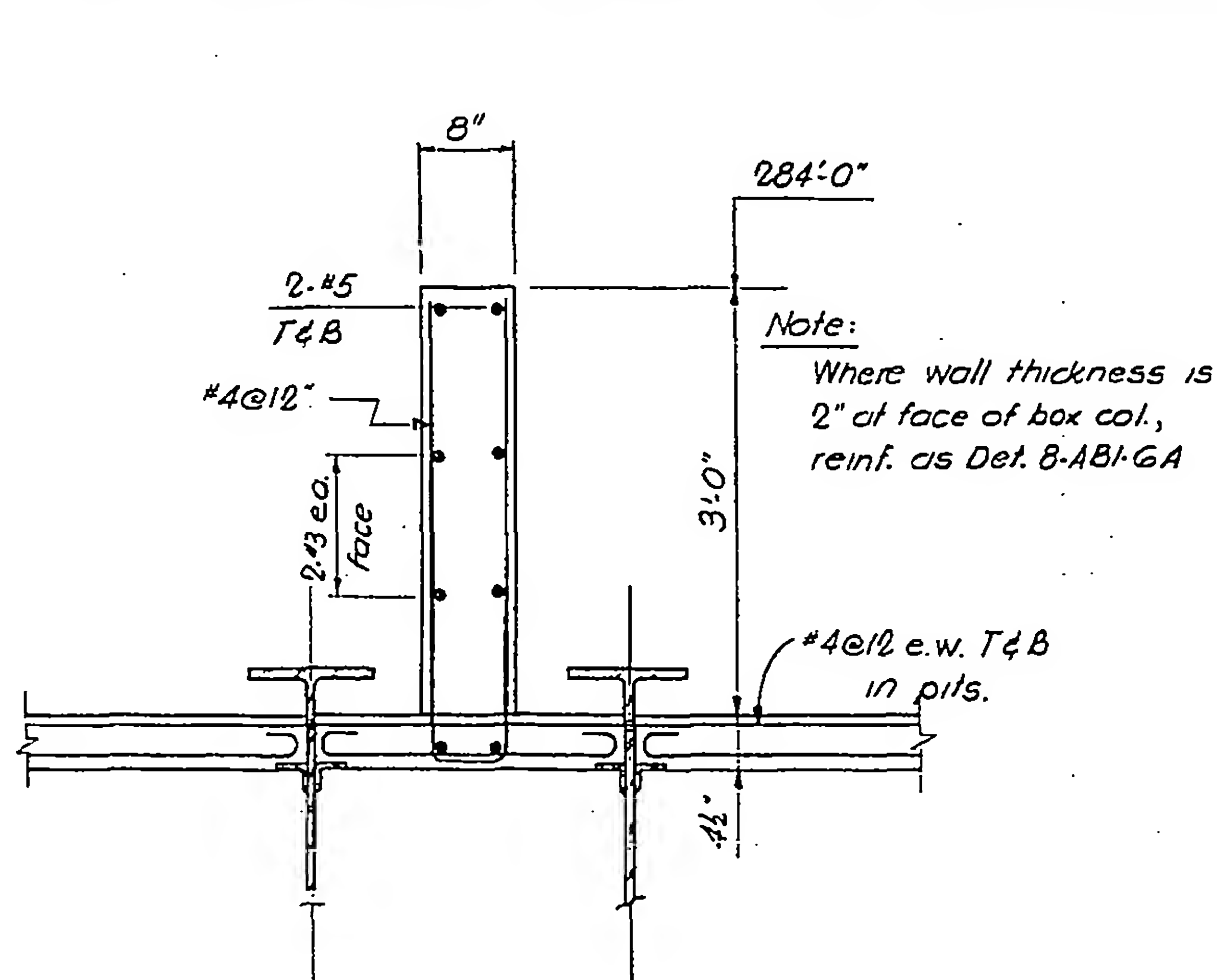
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

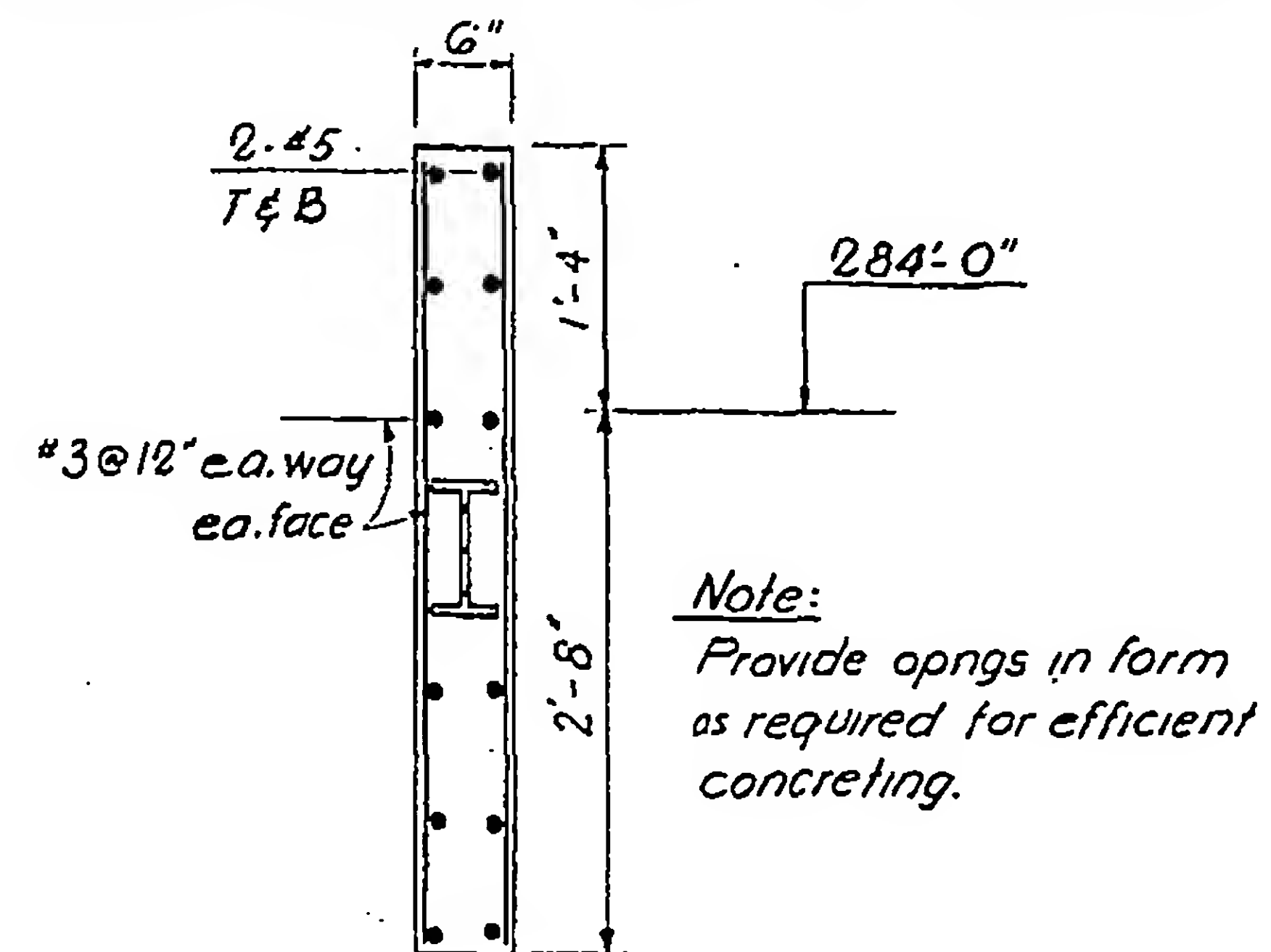
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DATE 1-28-69

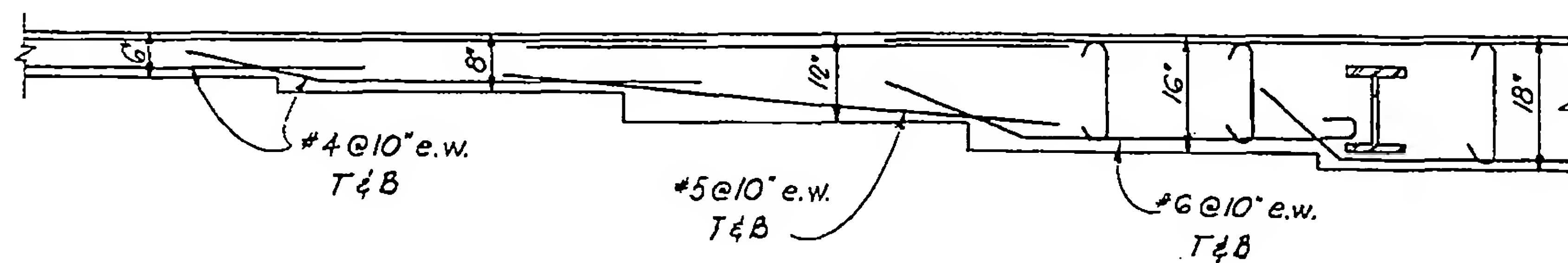
REVISIONS



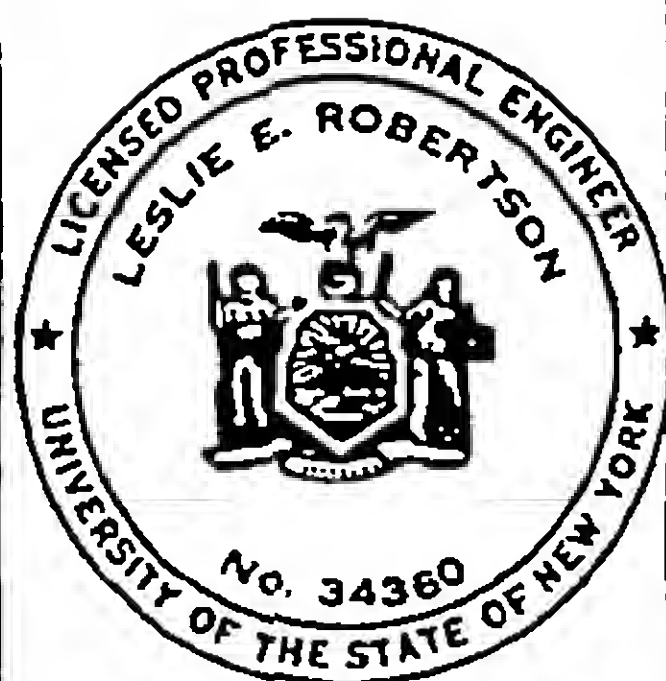
Section S-S



Section T-T



Section U-U



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DRAWN

G.T.H.

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8-AB4-12.7

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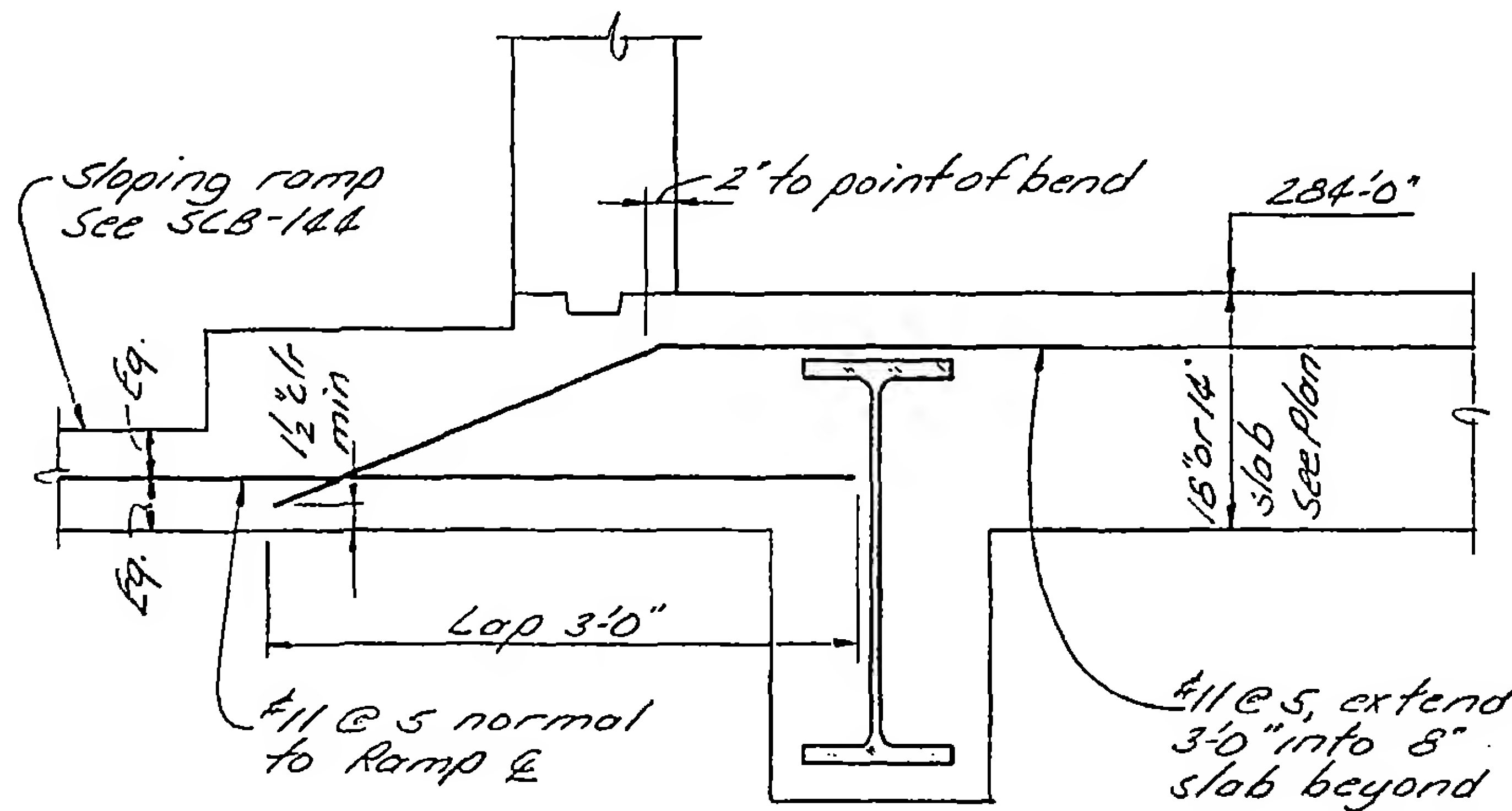
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

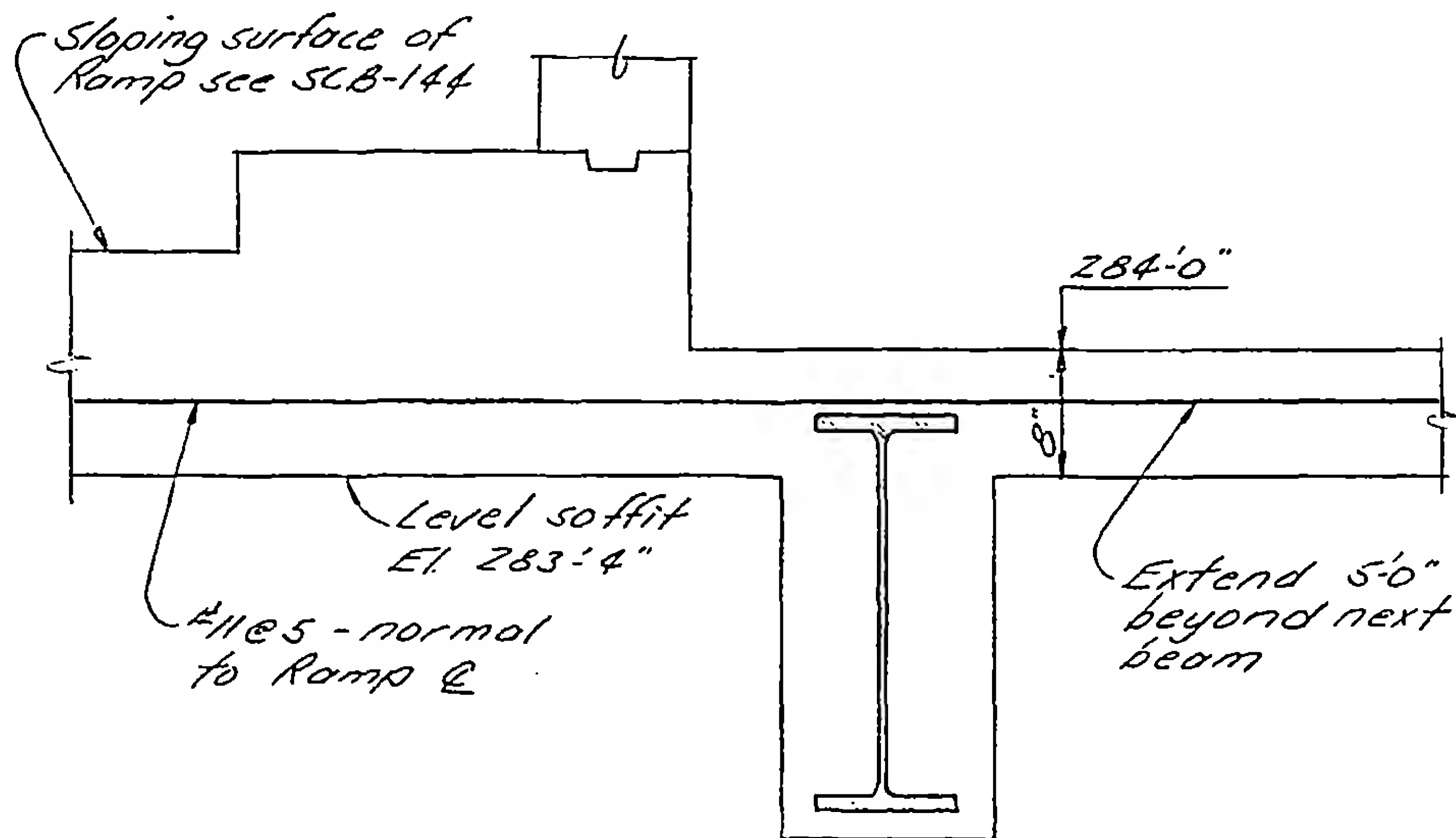
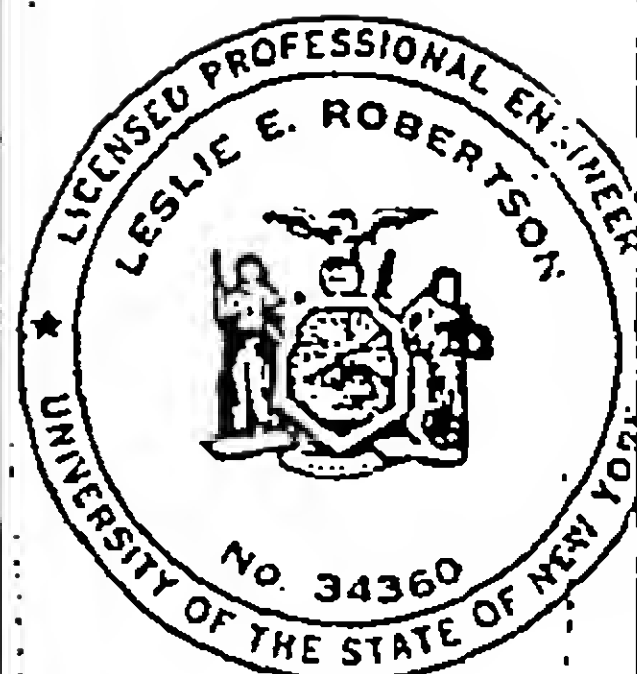
TITLE SECTIONS AT SUBLEVEL #1, EL 284'-0"

DATE 8-5-69

REVISIONS



Note to Sect V&W
#11 bars are
additional to
reinf shown in
plans and details

Section V-VSection W-W

DESIGNED

DRAWN

REVIEWED

W. D. Brewer

8-A84-12.8

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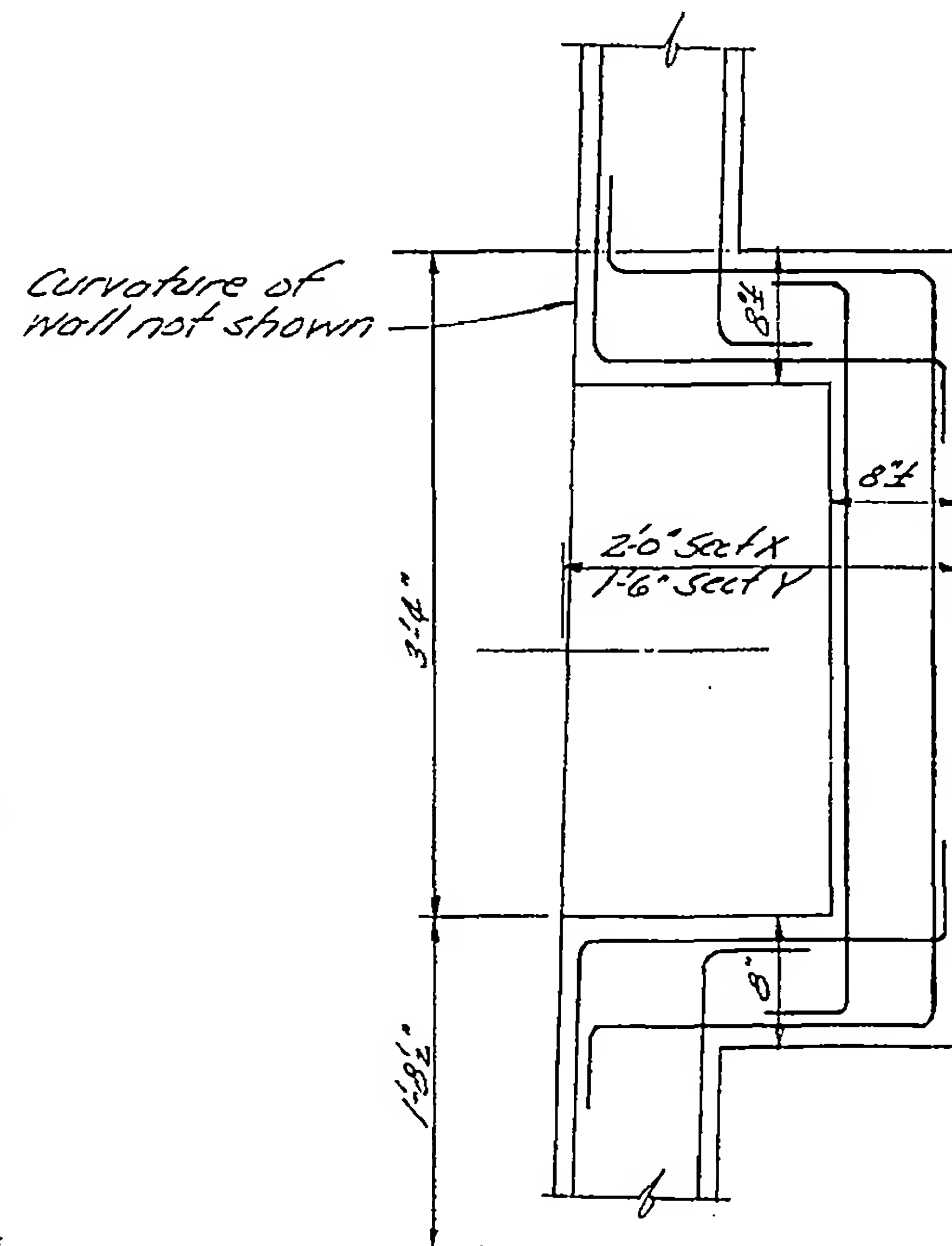
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SECTION AT SUBLEVEL #1, EL 284'0"

DATE

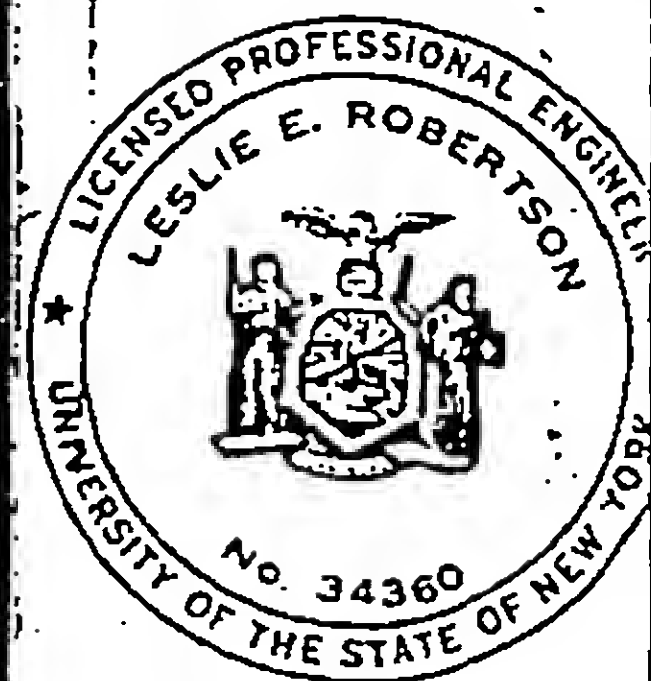
8-5-69

REVISIONS

Sectional Plan X-X as shownSectional Plan Y-Y opp hand & as noted

Notes:

1. Horizontal and vertical reinforcing similar to Section D-D on SCB-144
2. Provide chases, pockets and other features as shown on Architectural Design Dwg's and Approved Shop Dwg's.



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REVIEWED

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8-AB4-12.9

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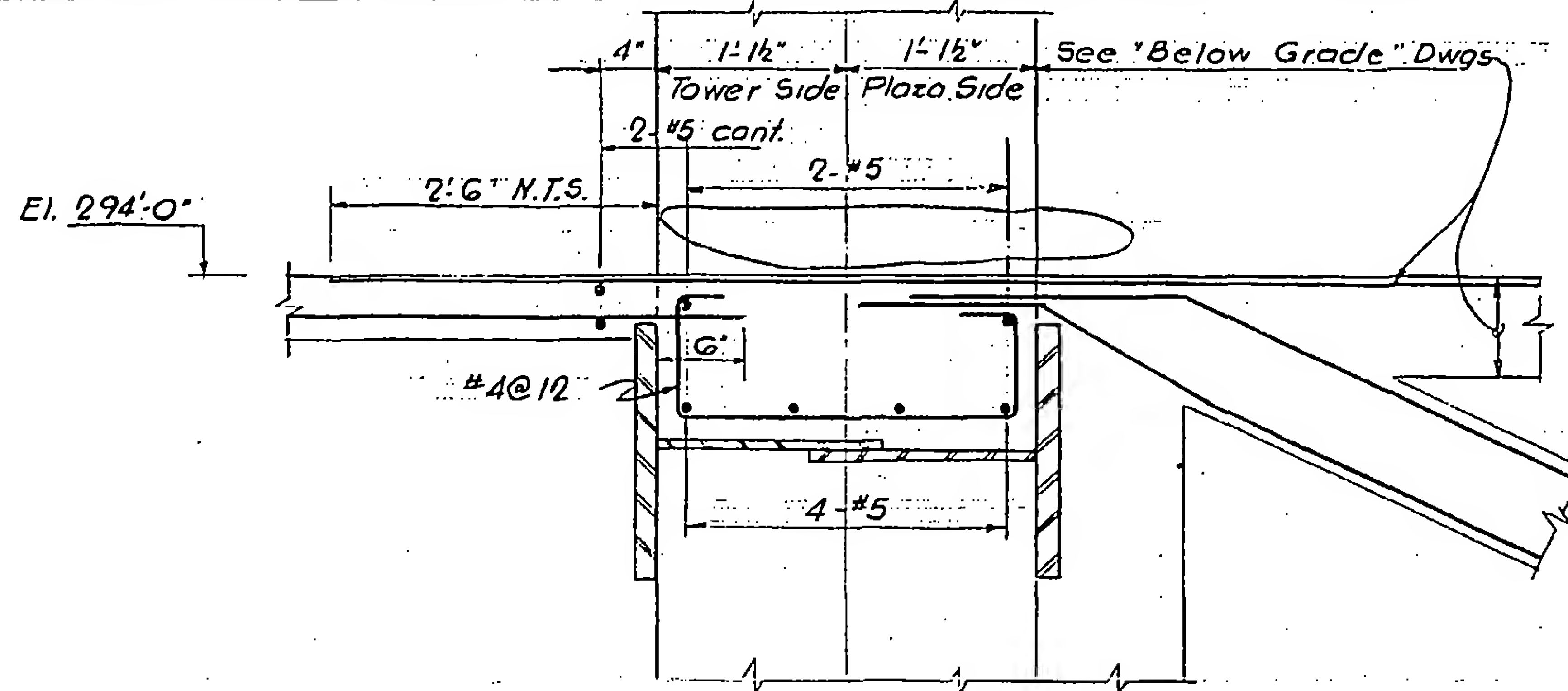
TITLE SECTIONS AT SERVICE LEVEL, EL. 294'-0"

DATE 5-1-68

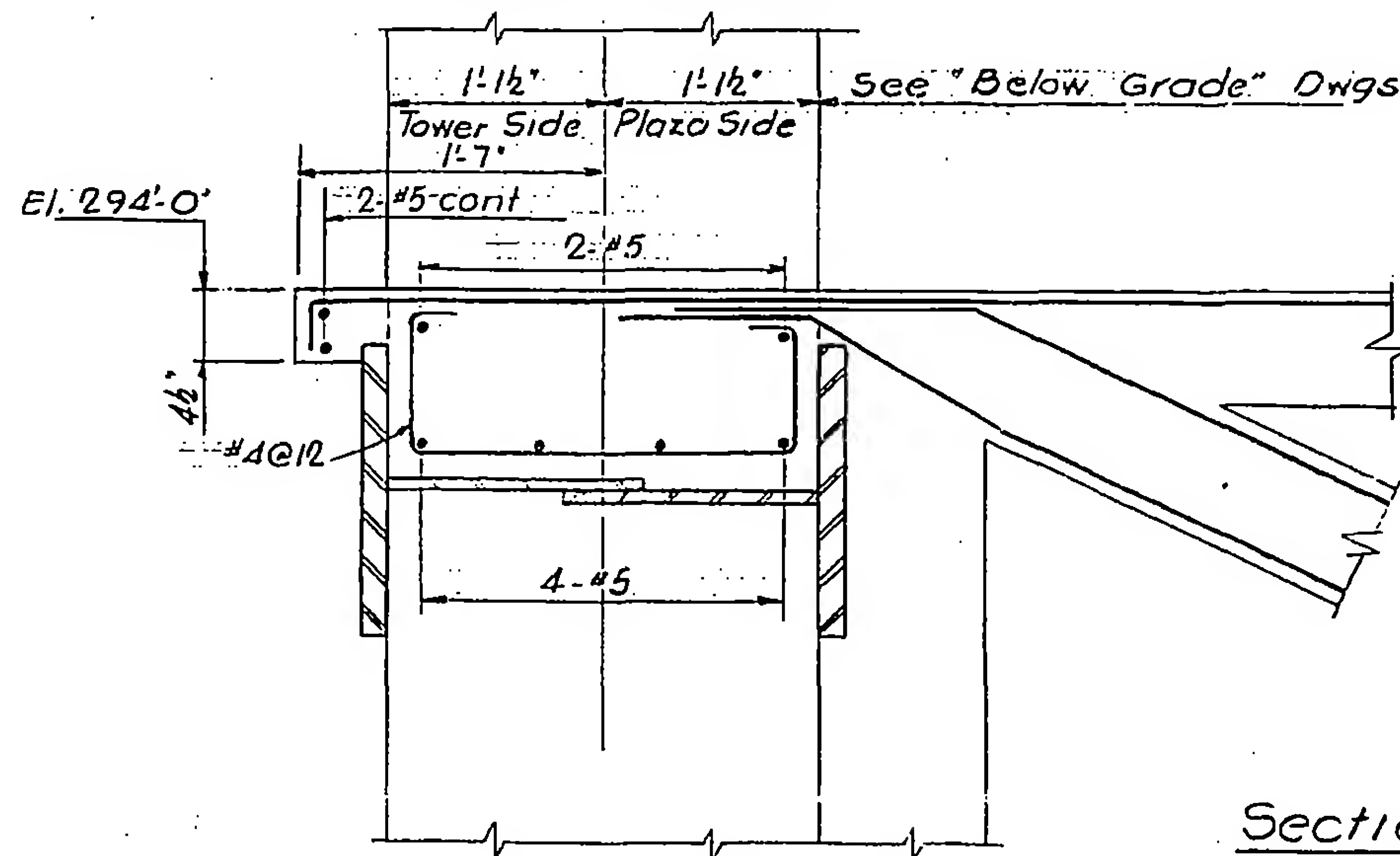
REVISIONS

6-3-69

7-11-69

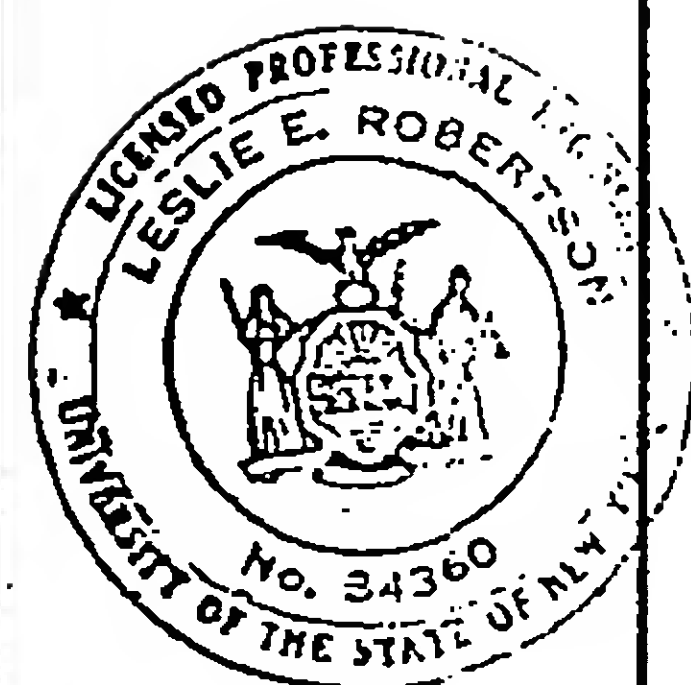


No Slab Opening



Section A-A

At Opening on Tower Side



8-AB4-13.1

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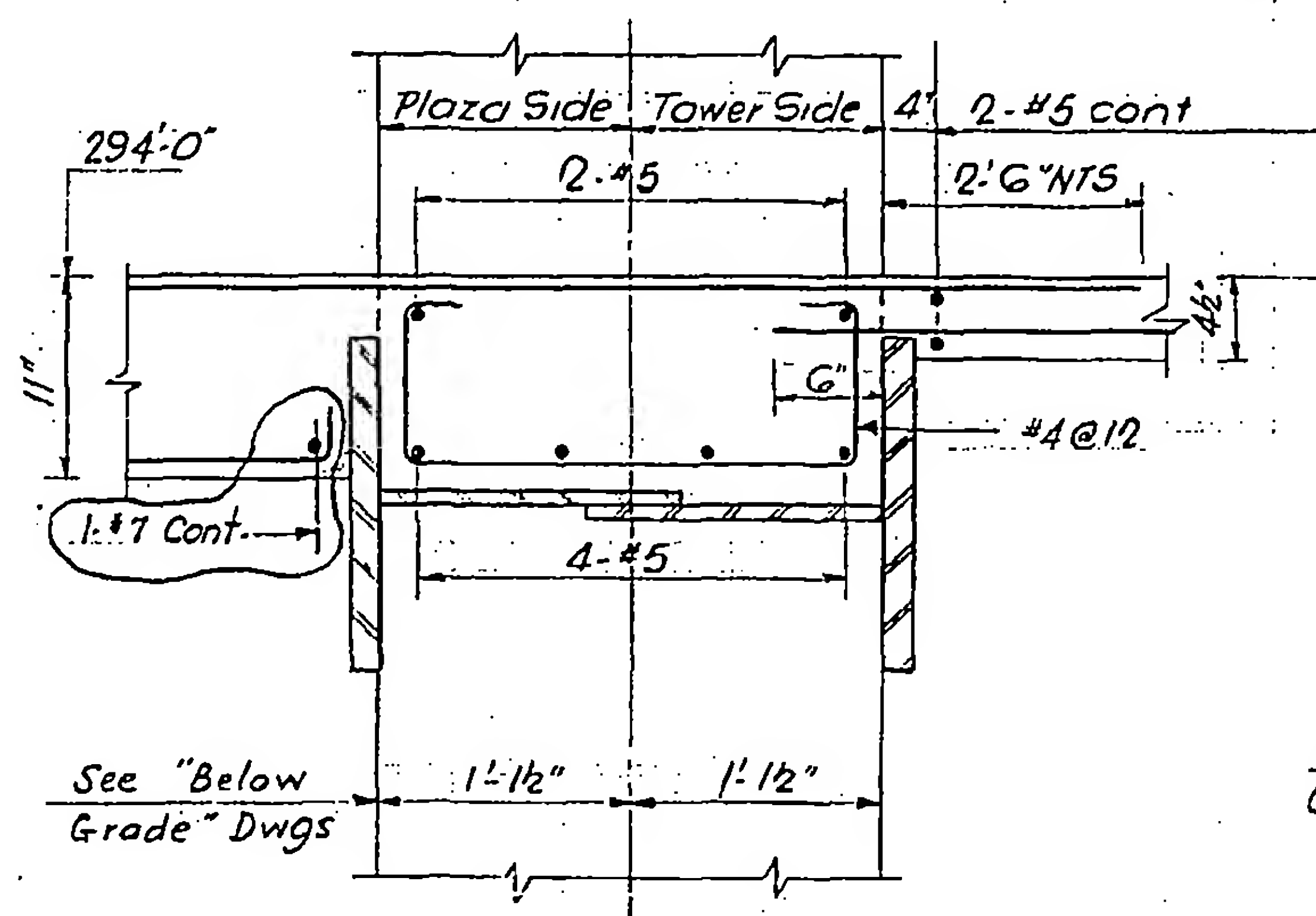
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SERVICE LEVEL, EL. 294'-0"

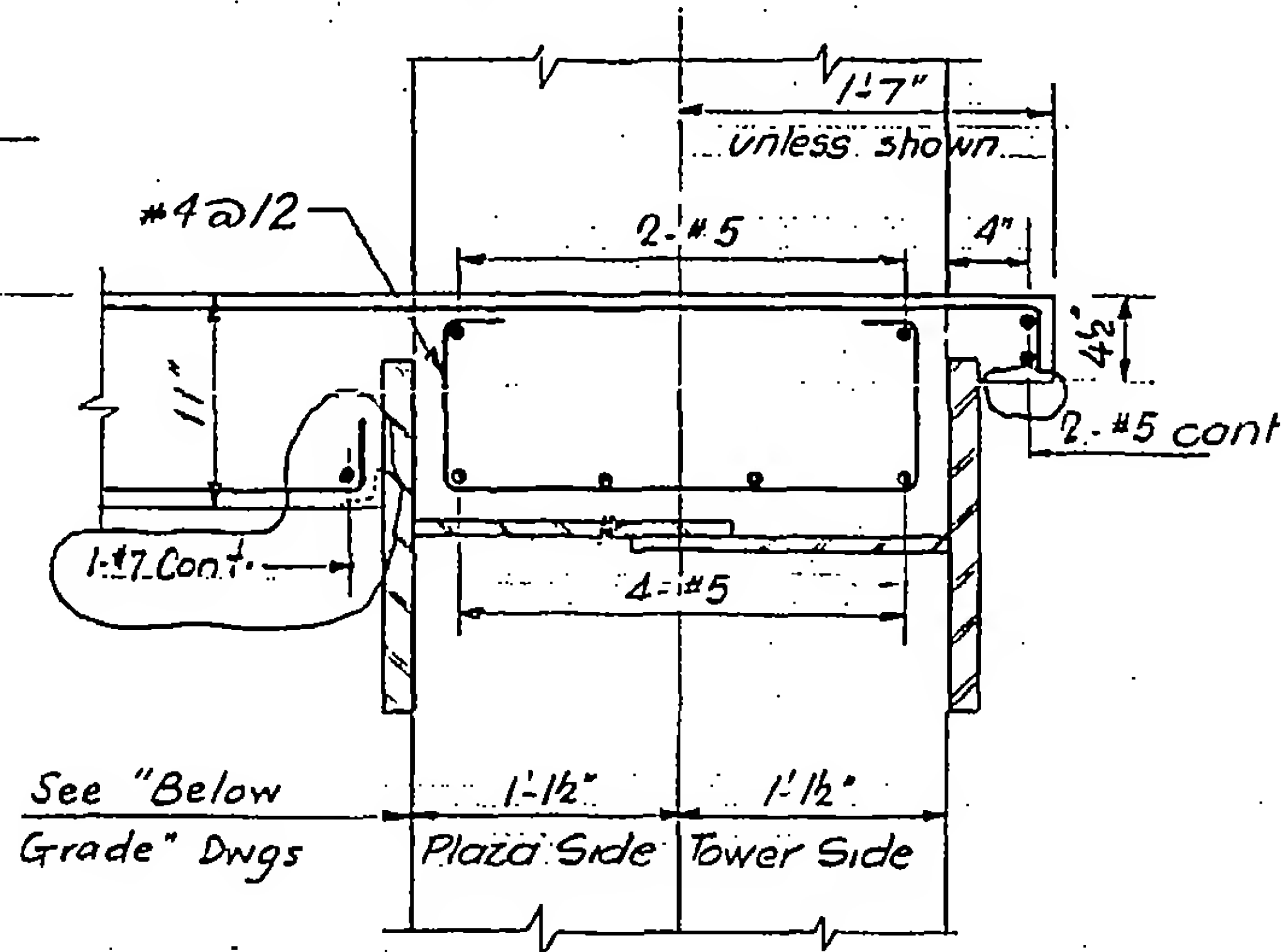
DATE 5-1-68

REVISIONS

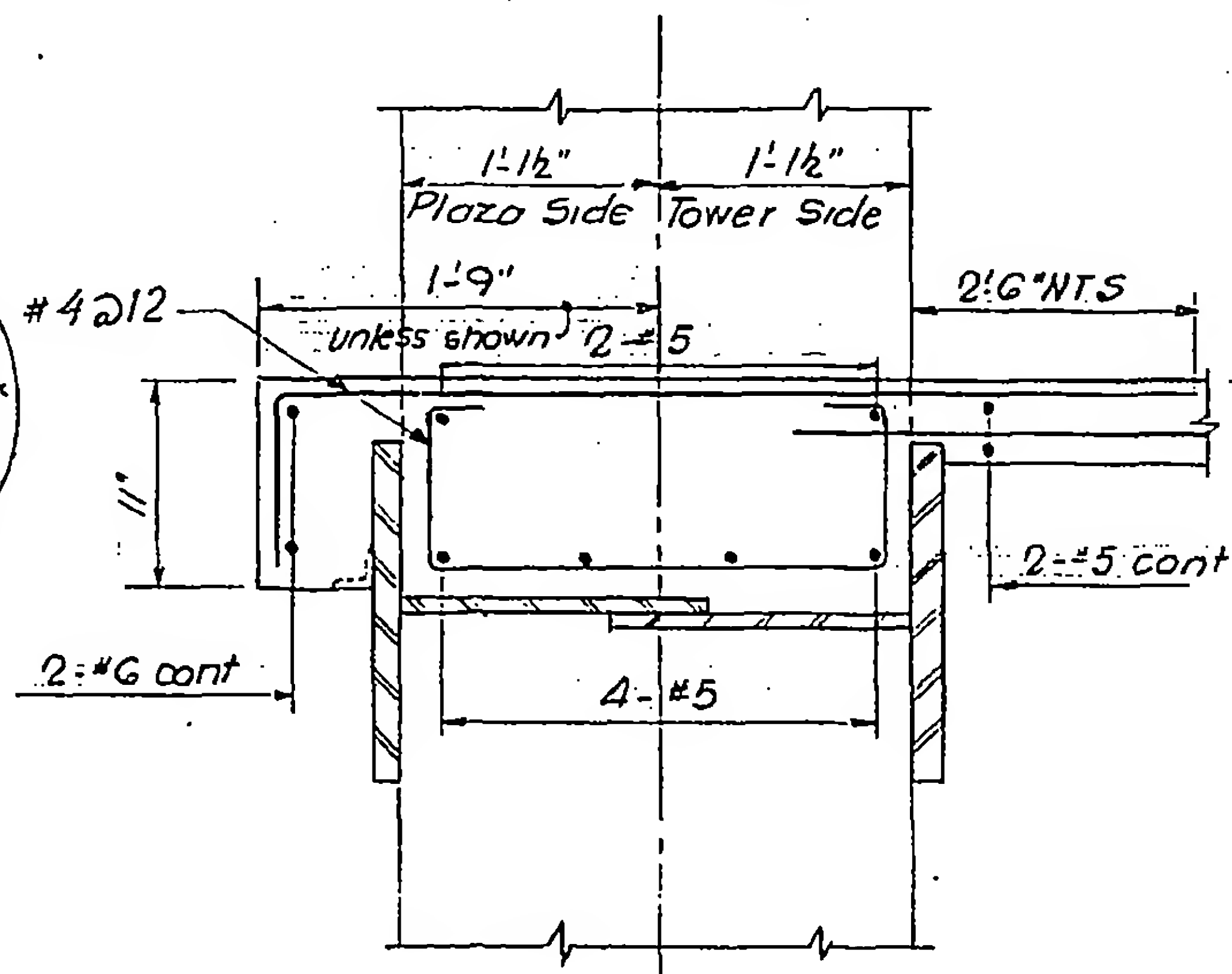
12-9-68



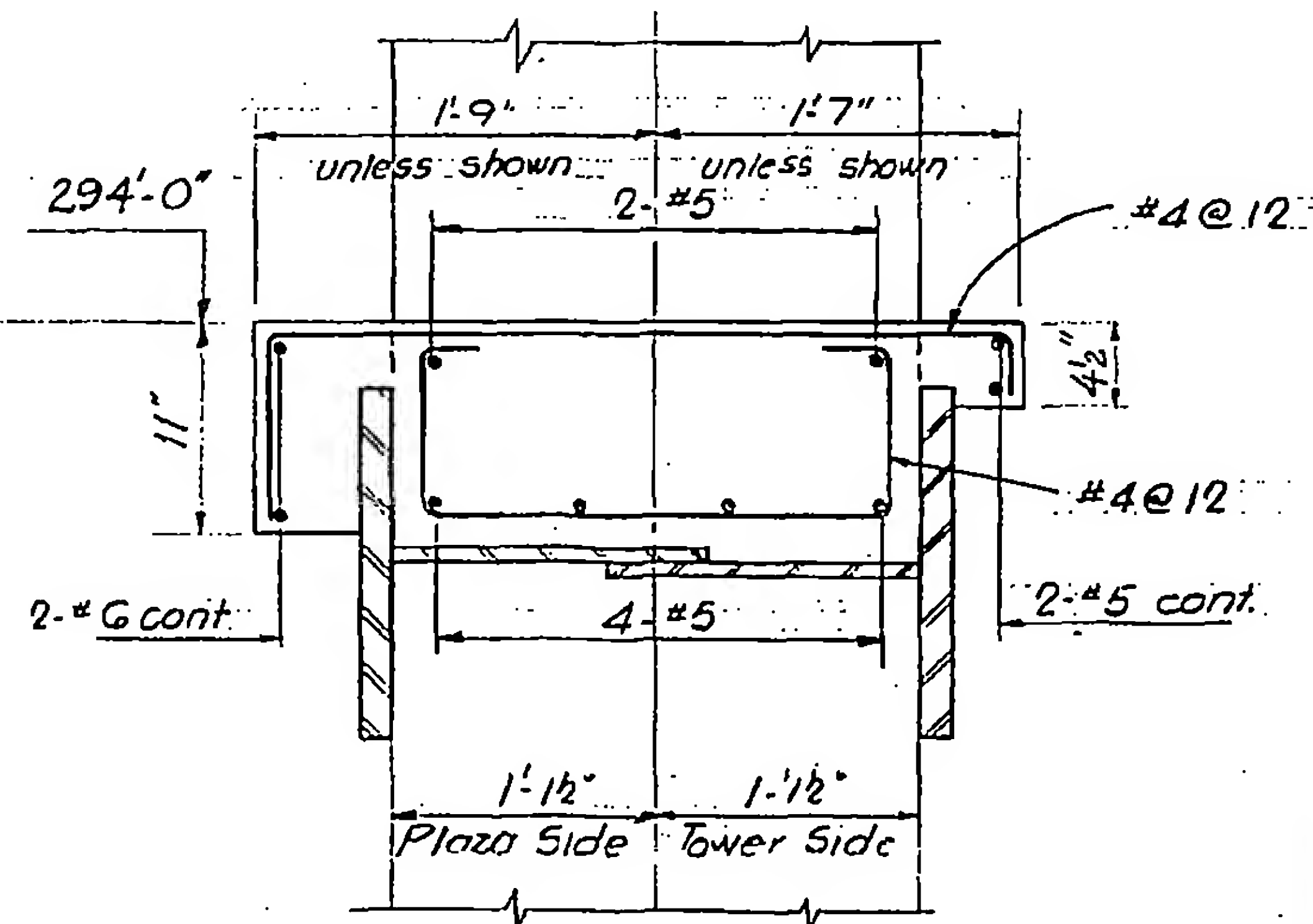
Section B-B



Section C-C

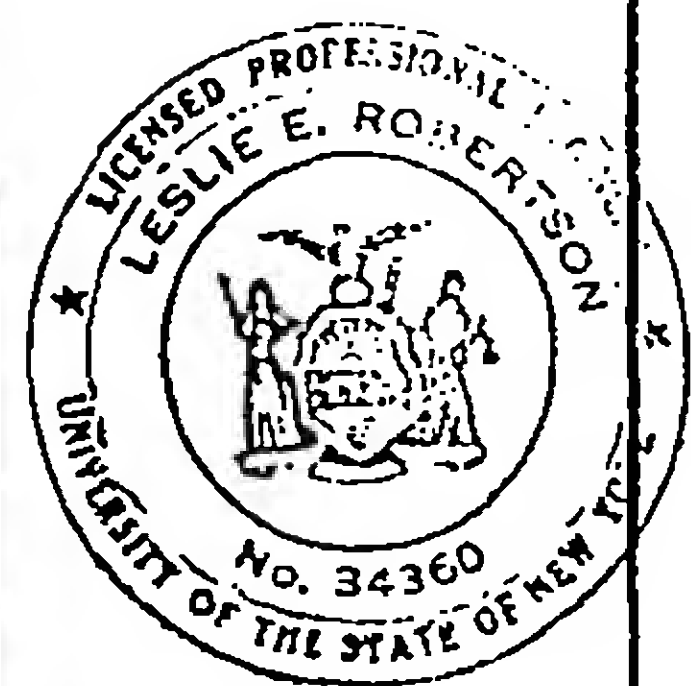


Section D-D



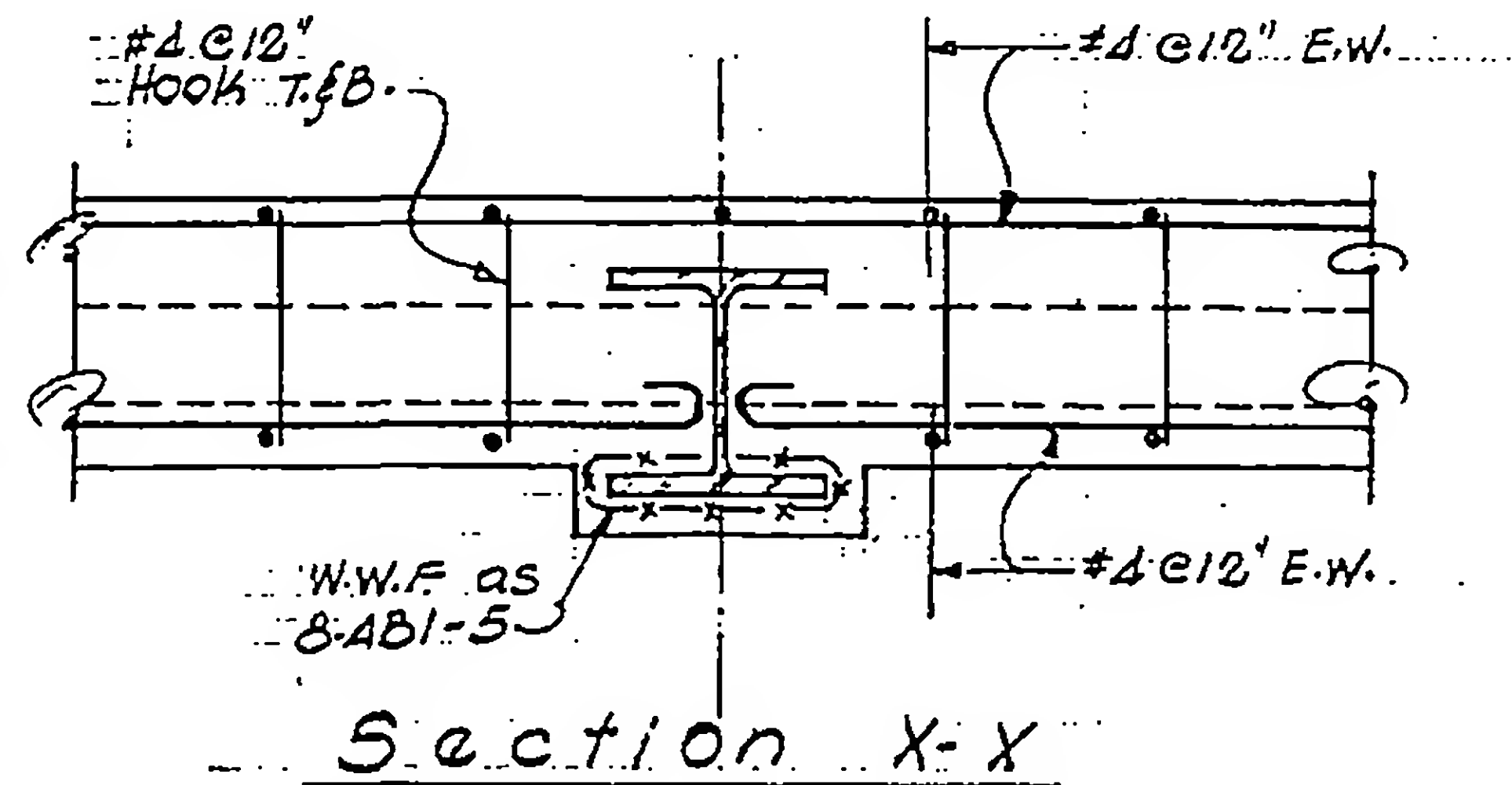
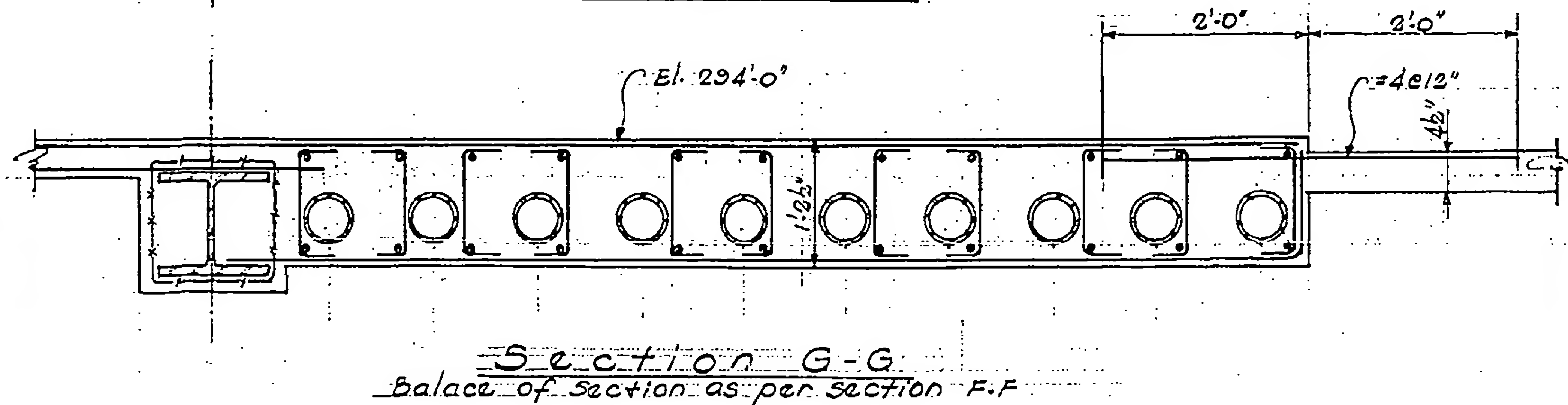
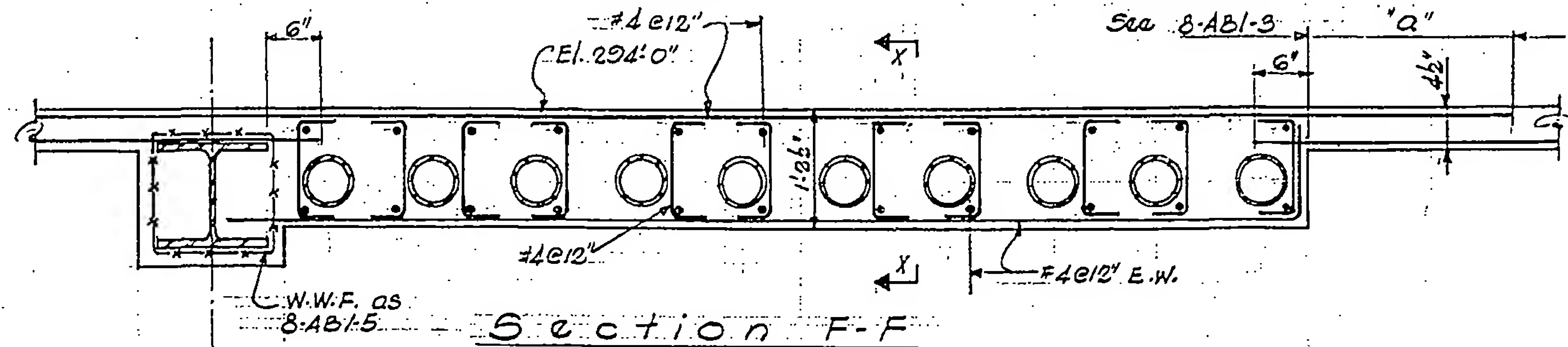
Section E-E

8-AB4-13.2



REVISIONS

8-20-68



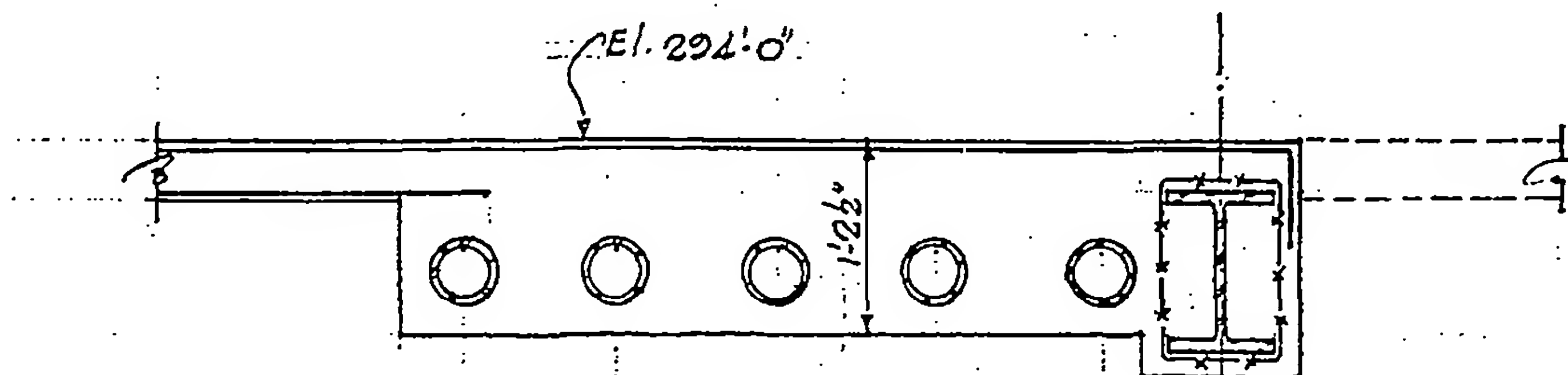
Notes:

1. Electrical conduits are shown schematically. For actual data see approved Electrical Shop Dwg's.
2. Vertical bars shown hooked may be combined into stirrups, subject to Engineer's approval.
3. Bar spacings shown are the greatest allowed. Closer spacing may be needed to conform with layout of conduits.

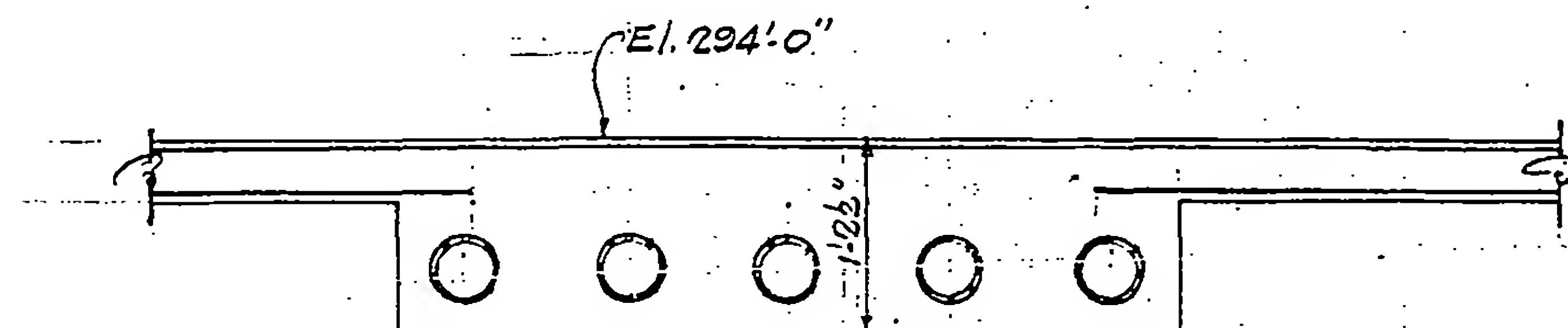


REVISIONS

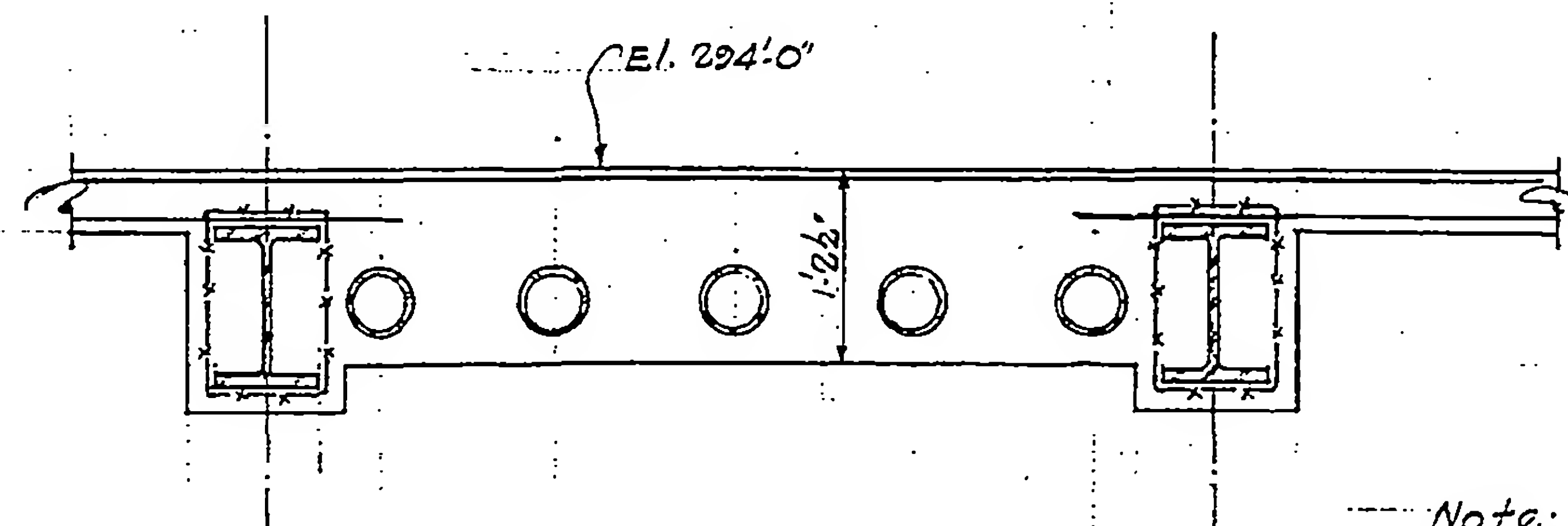
8-20-68



Section H-H

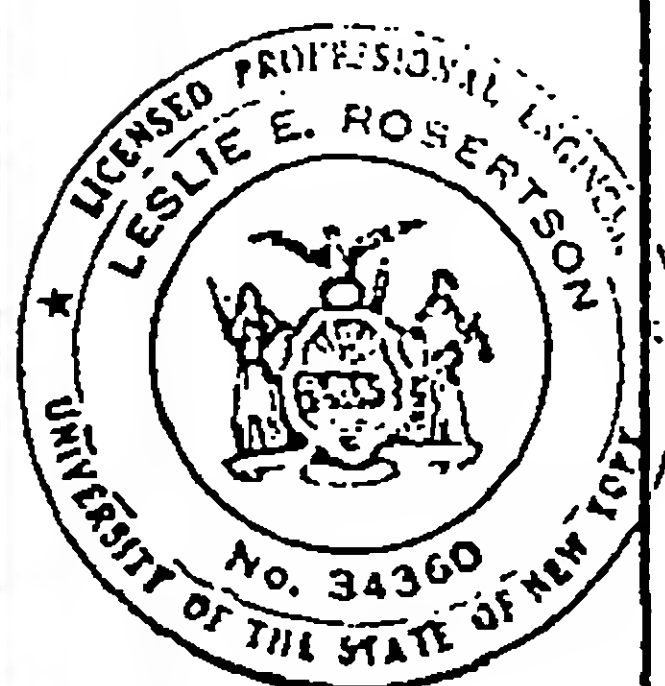


Section J-J



Section K-K

Note:
 Sections H, J & K are similar
 to Section F-F on 8-AB4-13.3,
 except as noted.



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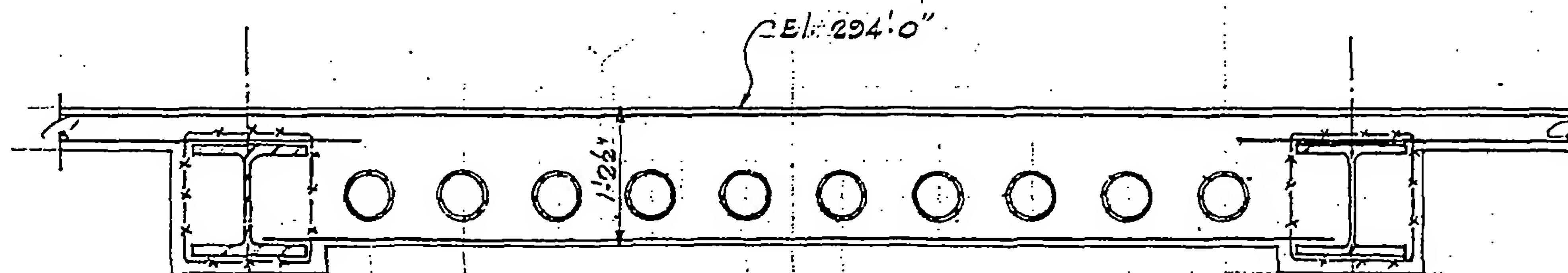
Structural & Civil Engineers

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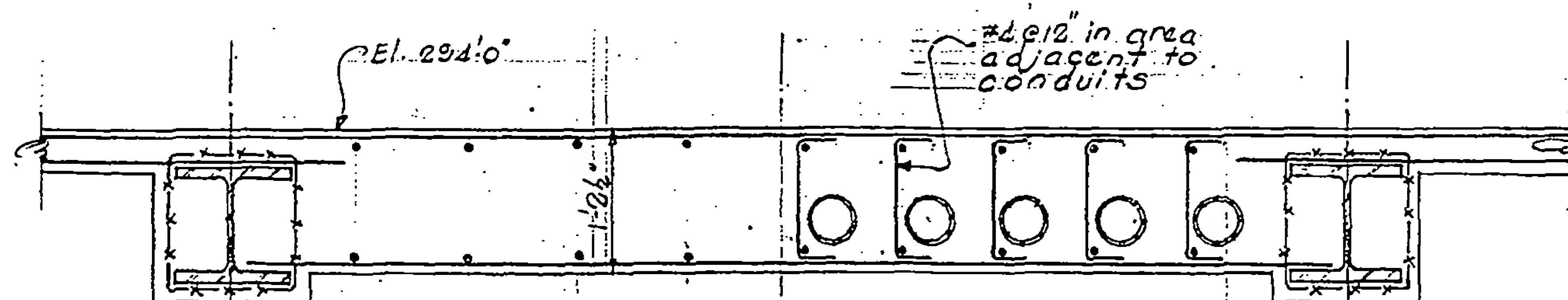
TITLE SECTIONS AT SERVICE LEVEL, EL. 294'

DATE 5-1-68

REVISIONS

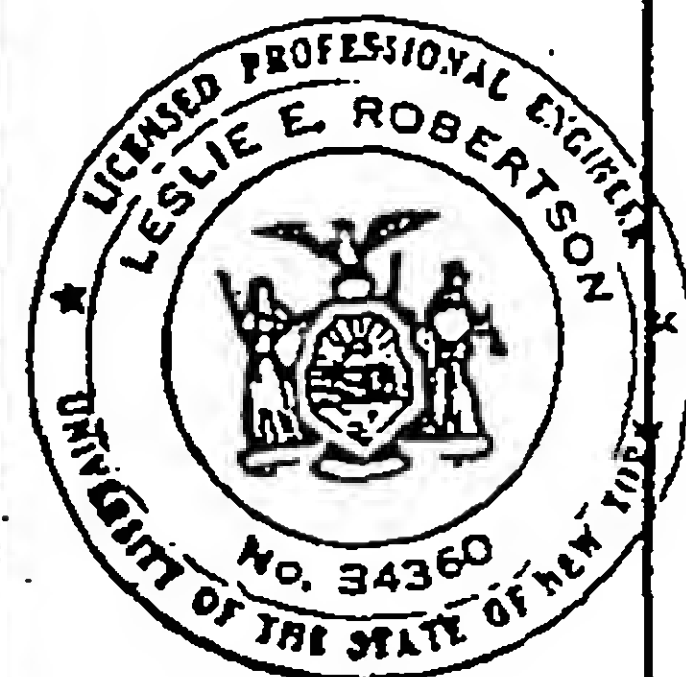


Section L-L



Section M-M

Note:
Sections L & M are similar to Section F-F on 8-AB4-13.3, except as shown.



8-AB4-13.5

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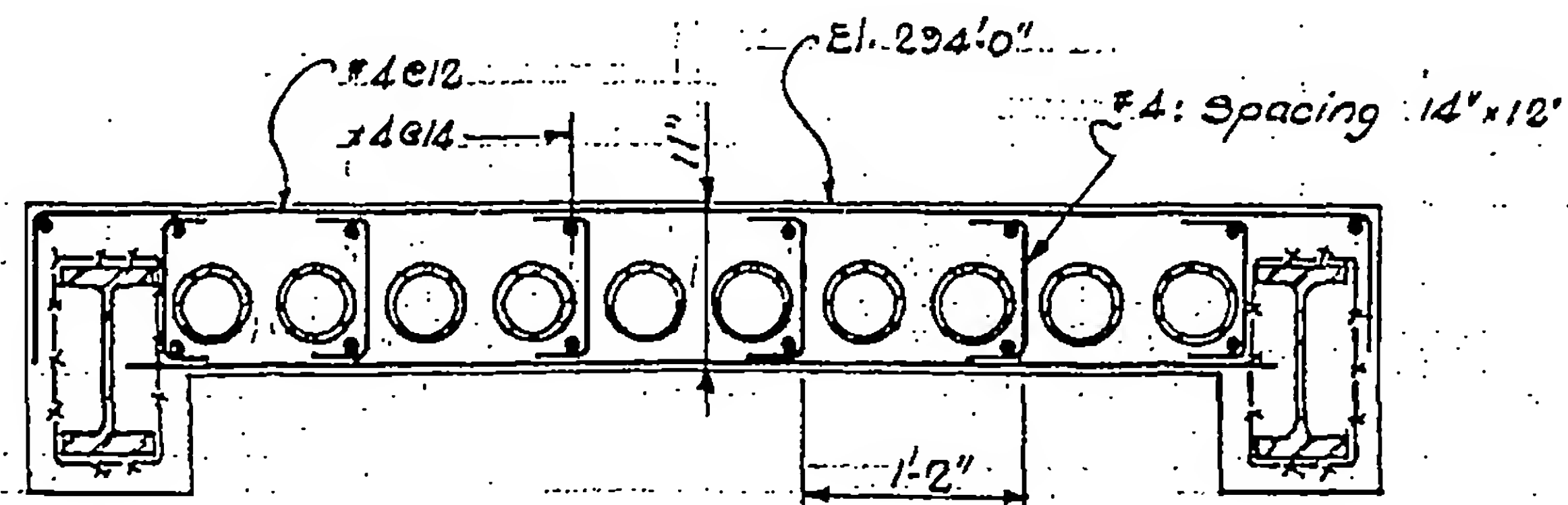
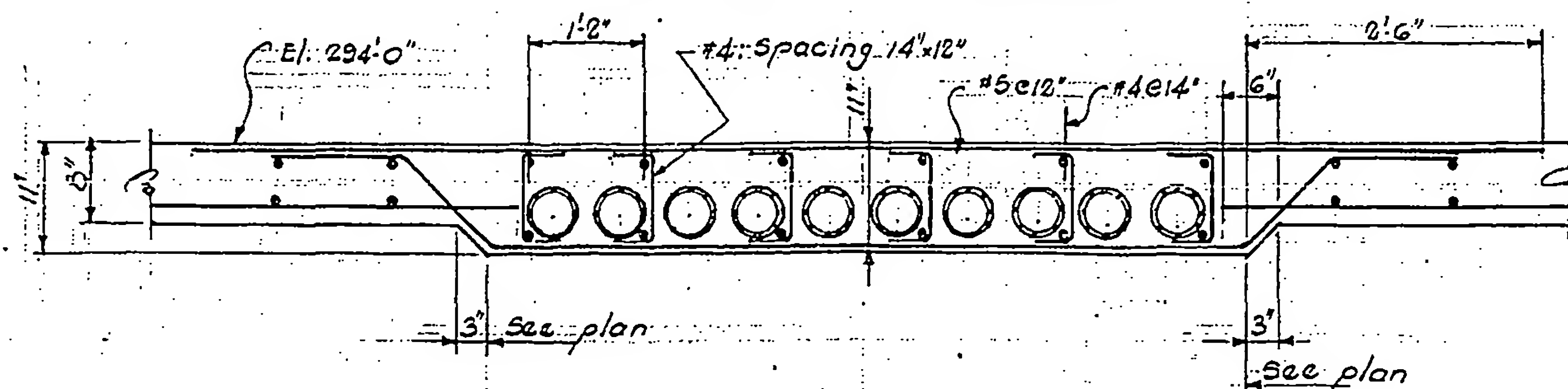
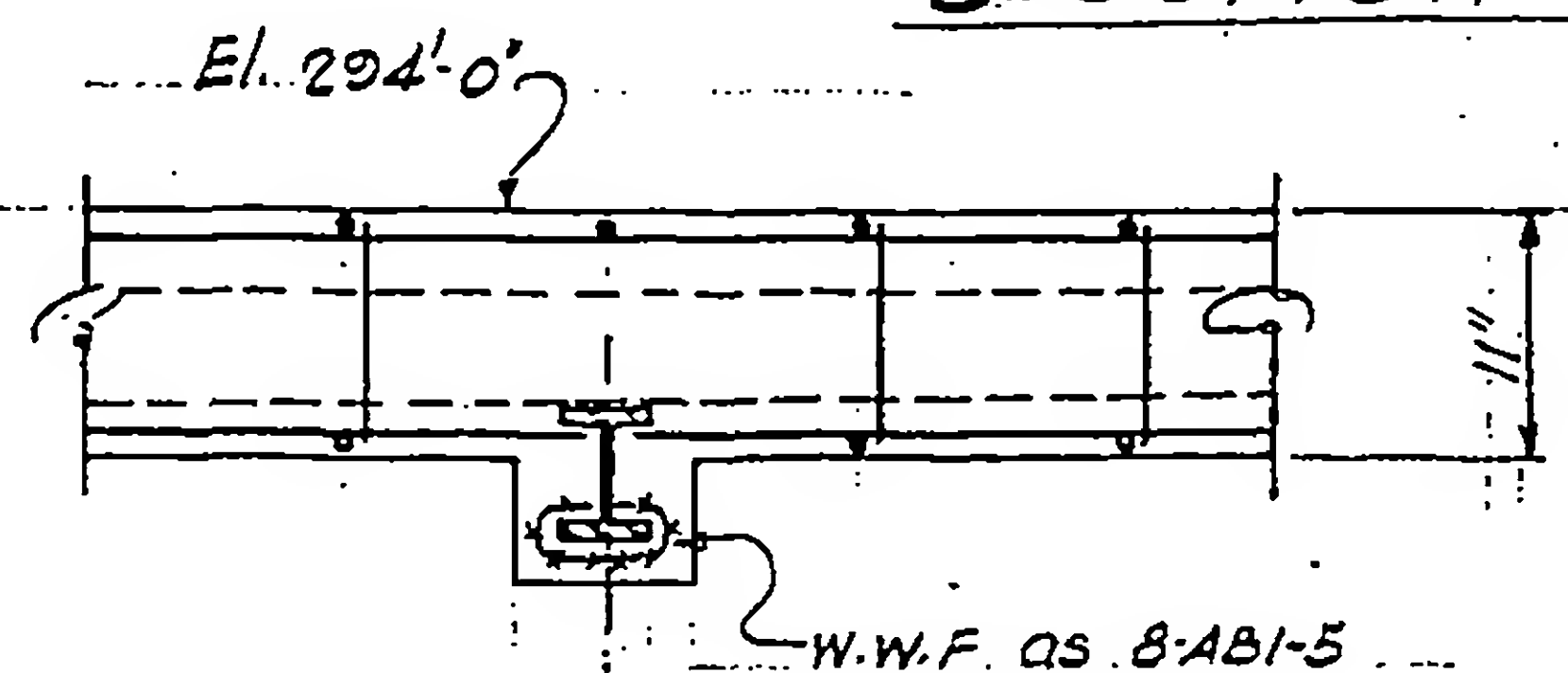
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

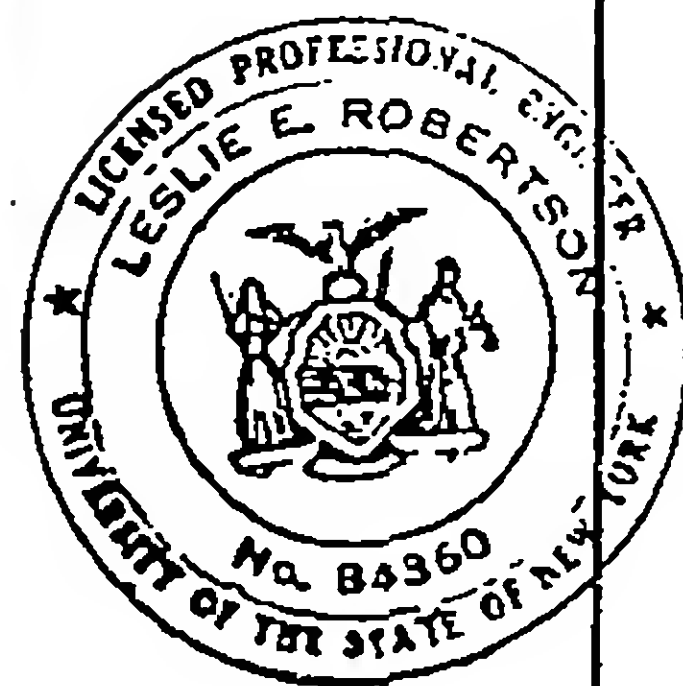
TITLE SECTIONS AT SERVICE LEVEL, EL. 294'

DATE 5-1-68

REVISIONS

Section Q-QSection N-NSection P-P

Note: Sections M, N, P are similar to Section F-F on 8-AB4-13.3, except as shown on this sheet or in plan.



8-AB4-13.6

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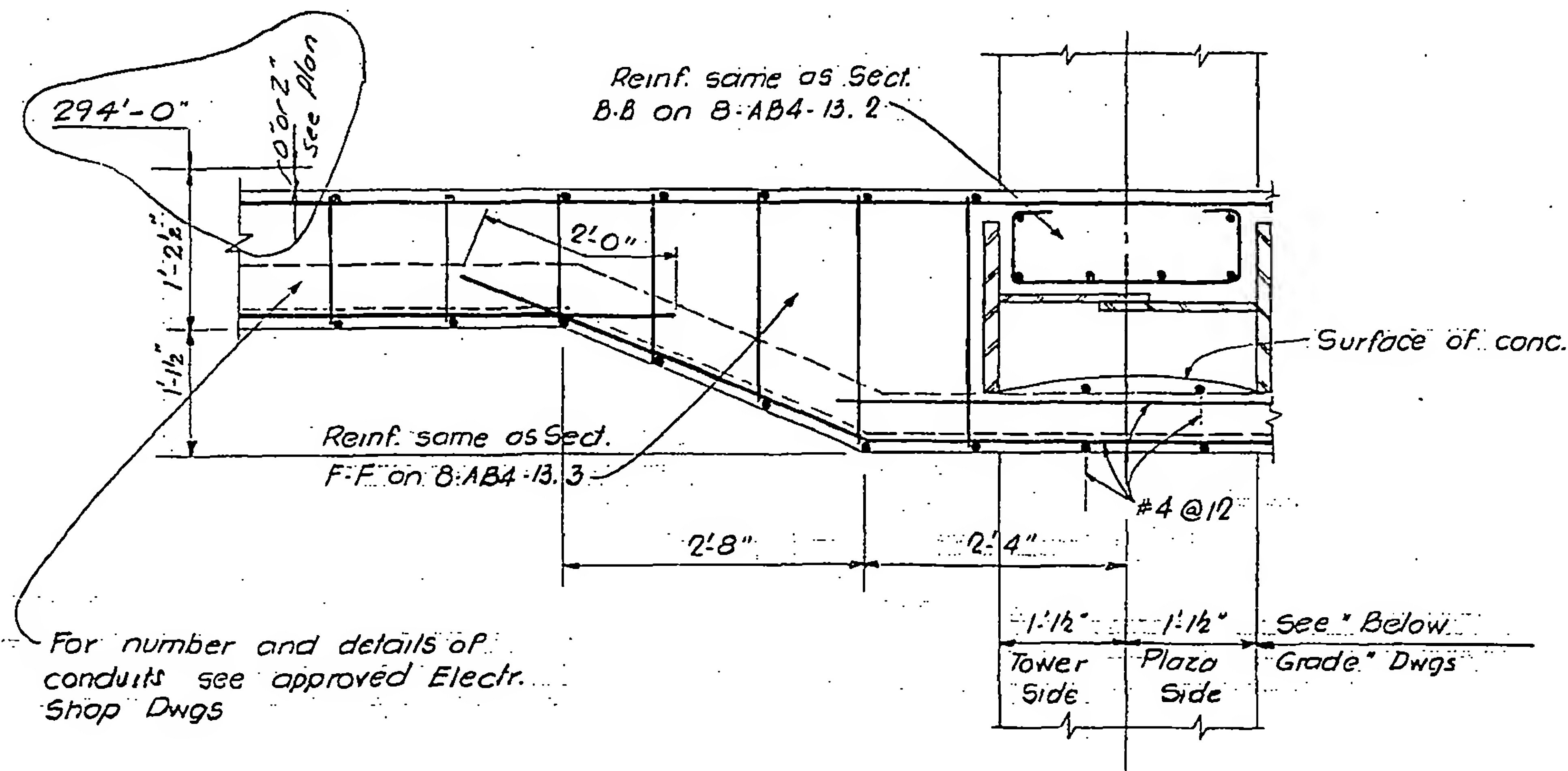
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT SERVICE LEVEL, EL. 294'-0"

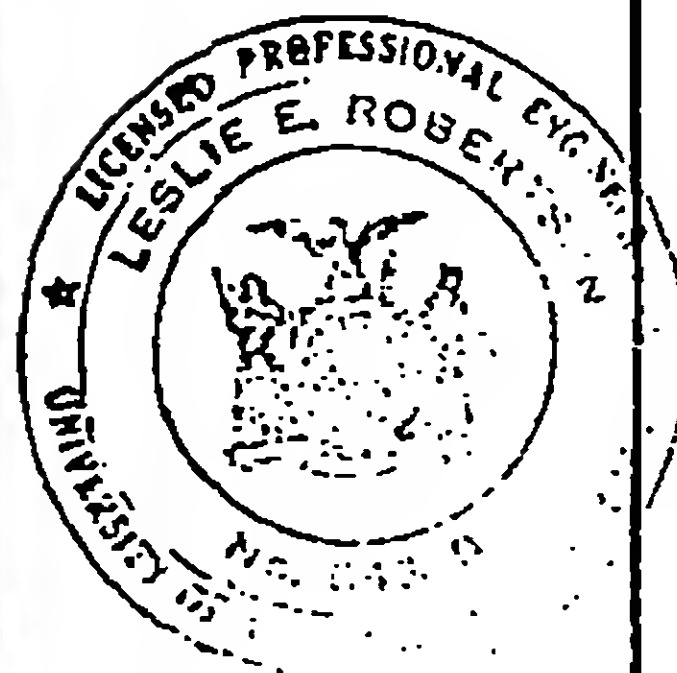
DATE 5-1-68

REVISIONS

7-11-69



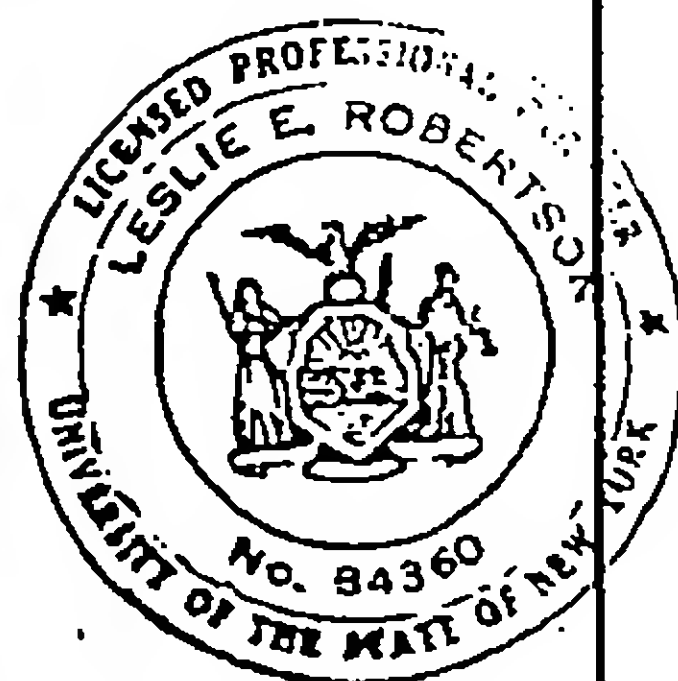
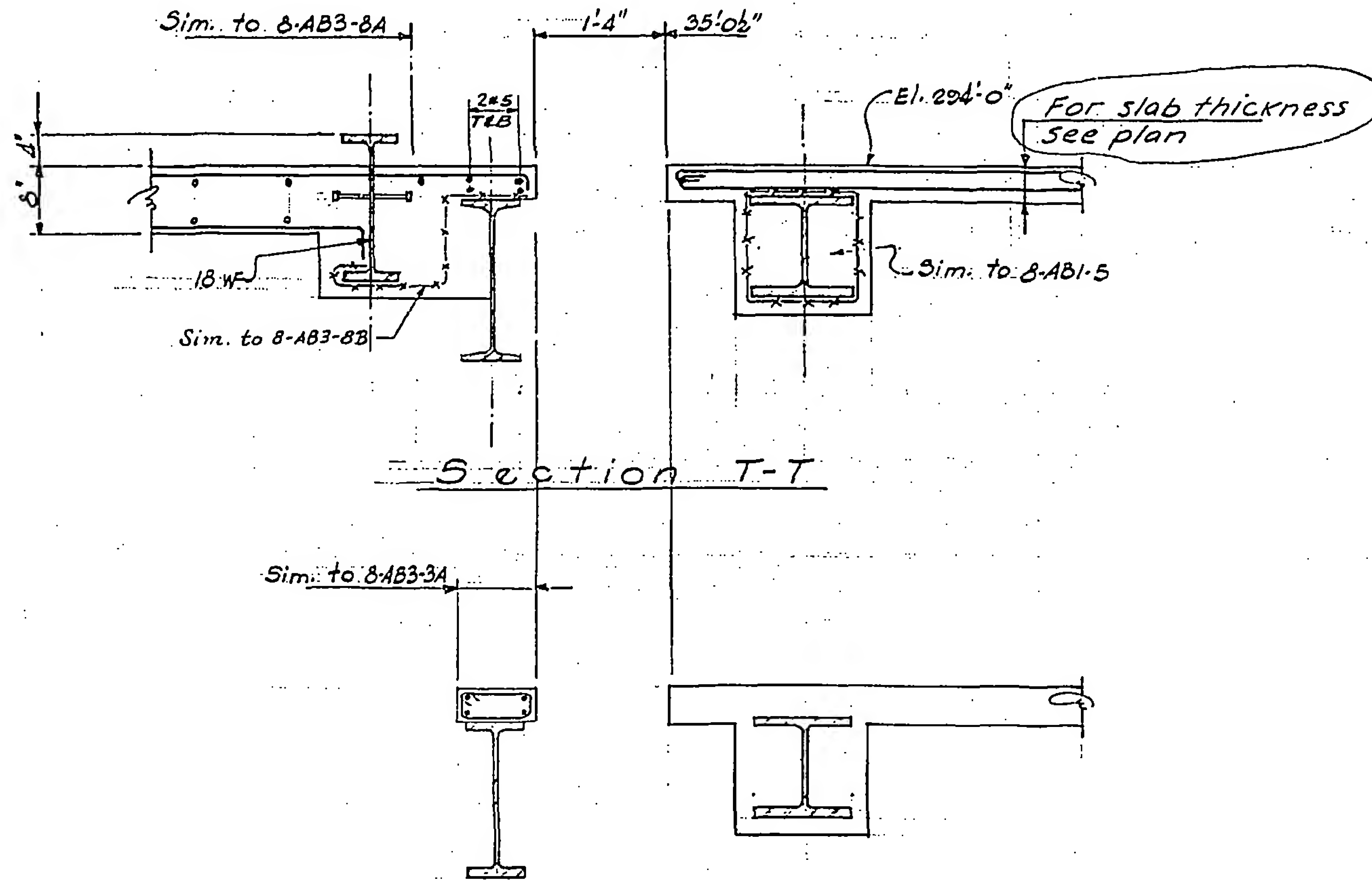
Section R-R



8-AB4-13.7

REVISIONS

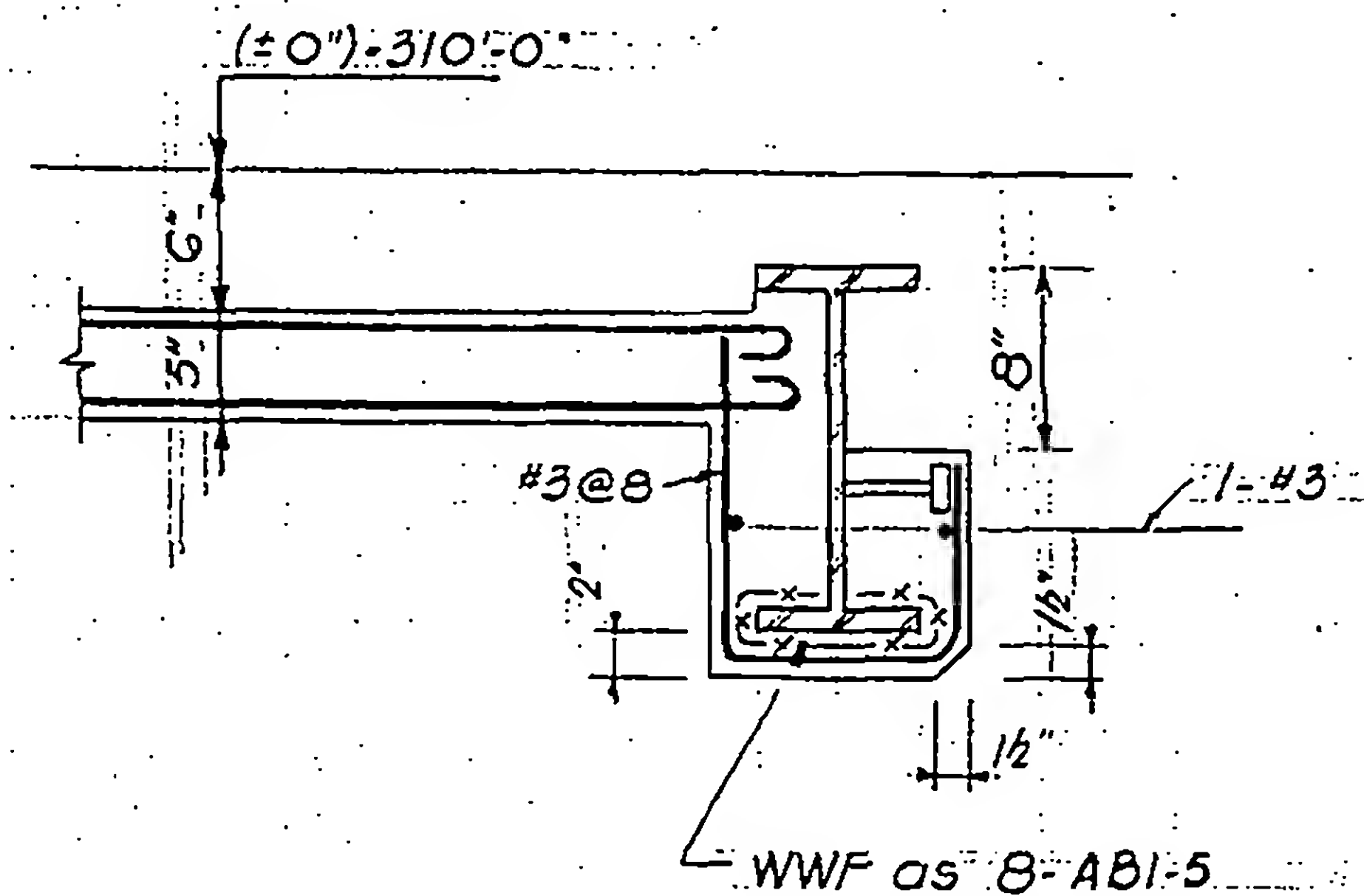
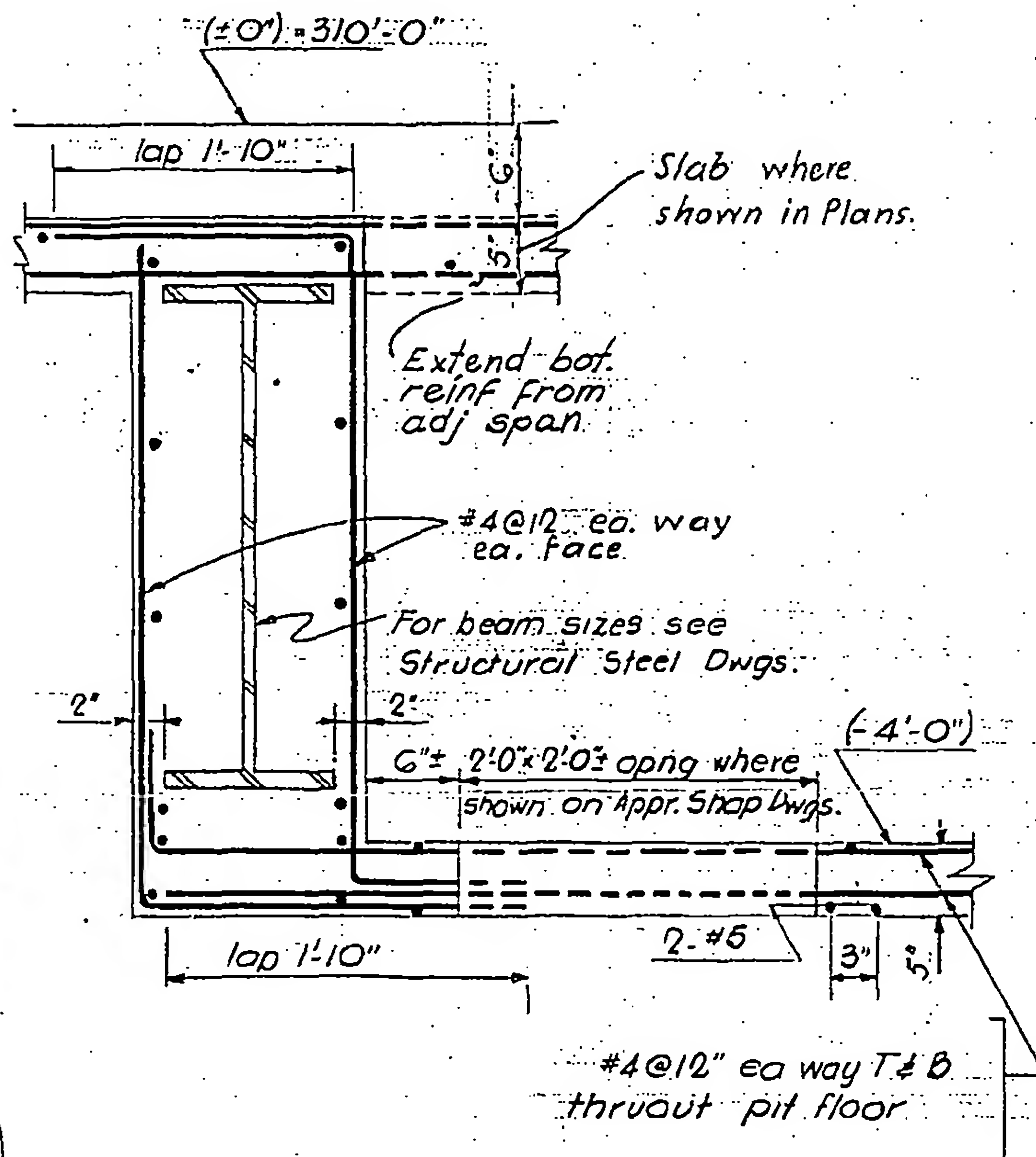
7-11-69



8-AB4-13.8

REVISIONS

7-11-69



Notes:

1. For frame of access door and other features see Archt. Section C/264 and other Archt. Dwg.
2. Check all dimensions affecting escalators with Approved Escalator Shop Dwg.

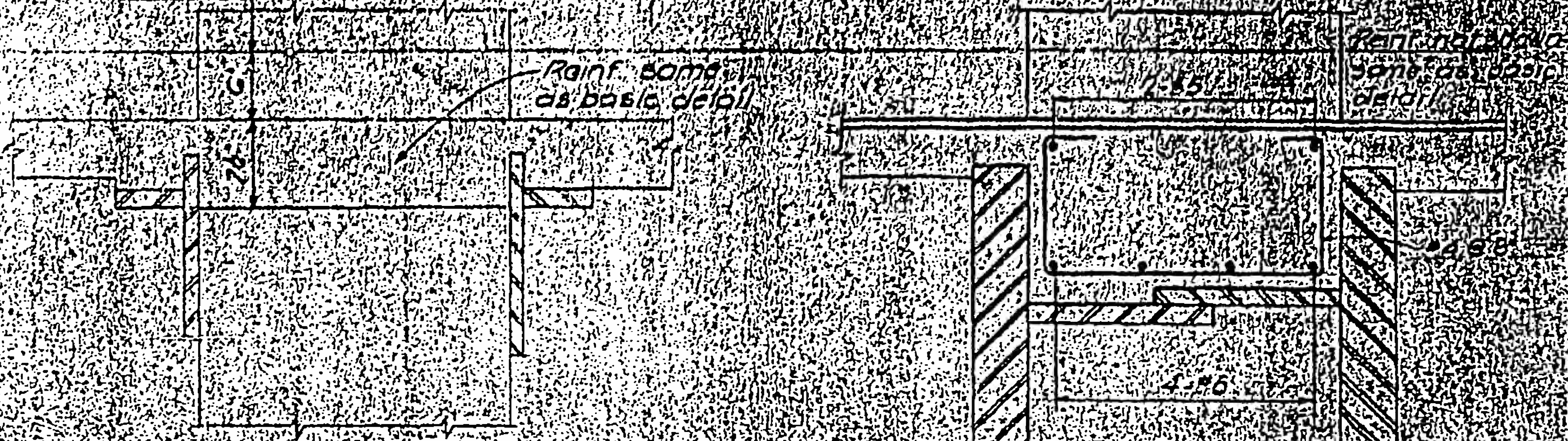


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PROJECT THE WORLD TRADE CENTER SECTION AT FLOOR 11 EL. 1810.0 DATE 5/1/68

REVISIONS

10/21/68

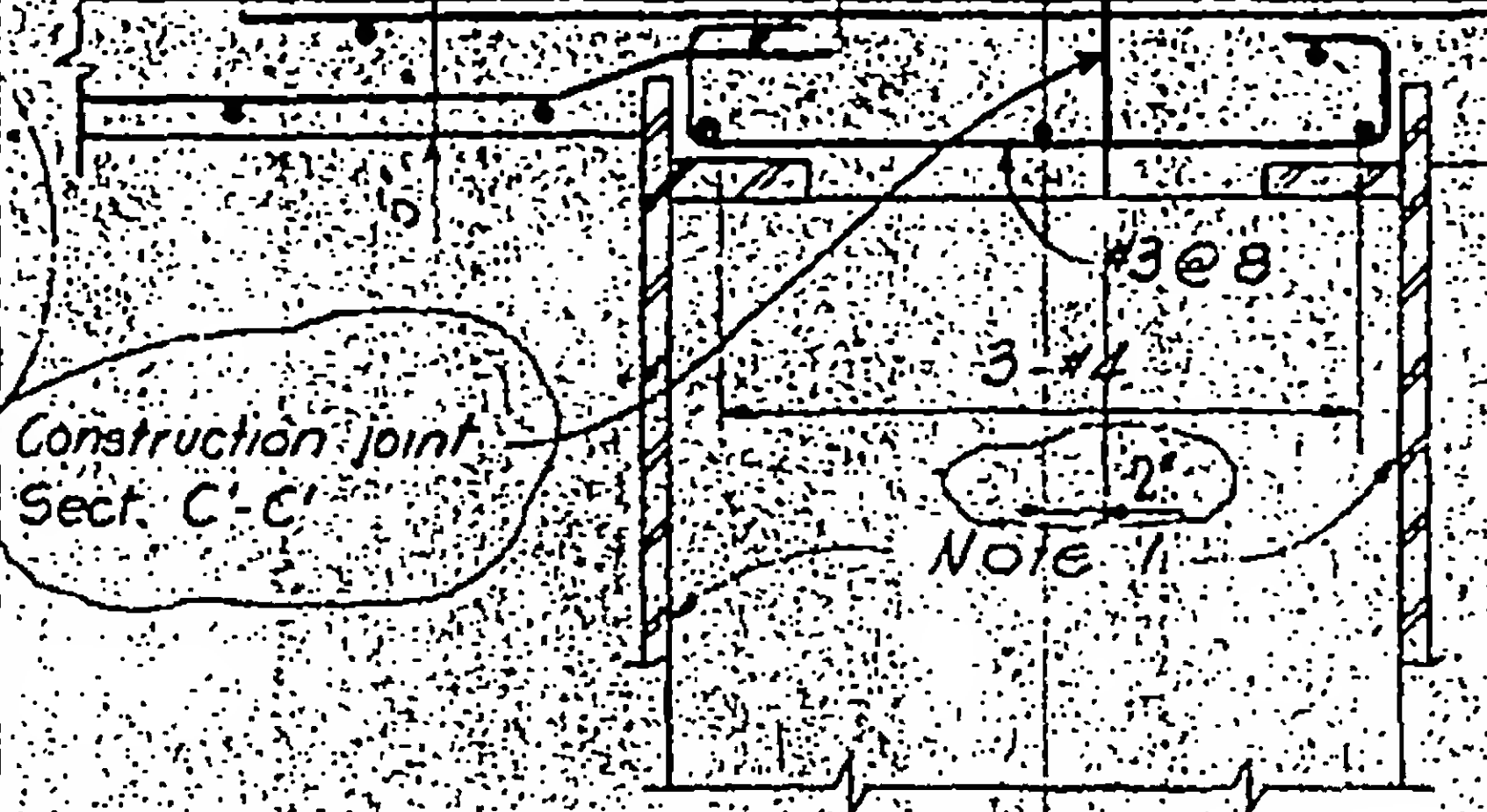
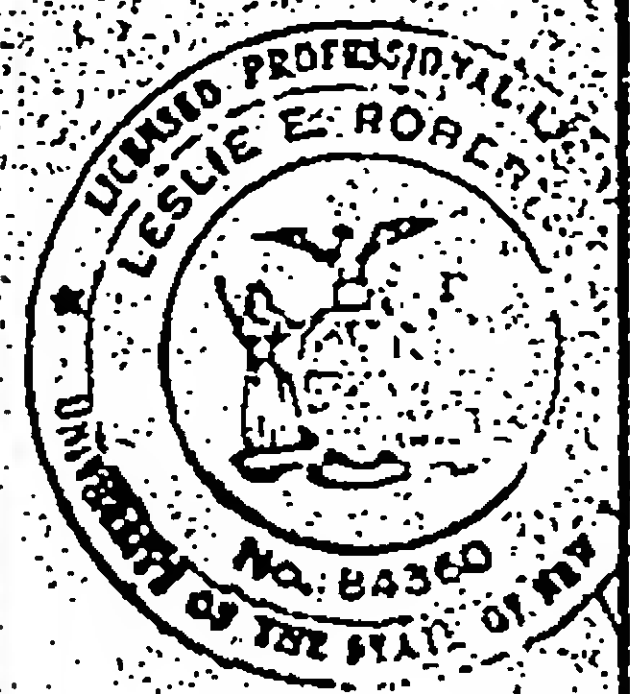


Section X-X
(W.T.C. 105.00) (W.T.C. 101.00)

See Below Gravel Dwg

2'-0" NTS	1'-1 1/2"	1'-1 1/2"	2'-0"
310'-0"	Lower Side	Plat side	Varies
	6'		0" where not otherwise shown
6'		2'-4"	#4 @ 8"

Section Y-Y



Notes

1. In Tower A, and in parts of Tower B, the spandrel is as shown in Section C-C. Elsewhere in Tower B, the spandrel varies as exemplified in Sections X-X and Y-Y. For full details see Struct. Steel Dwg.

Section C-C

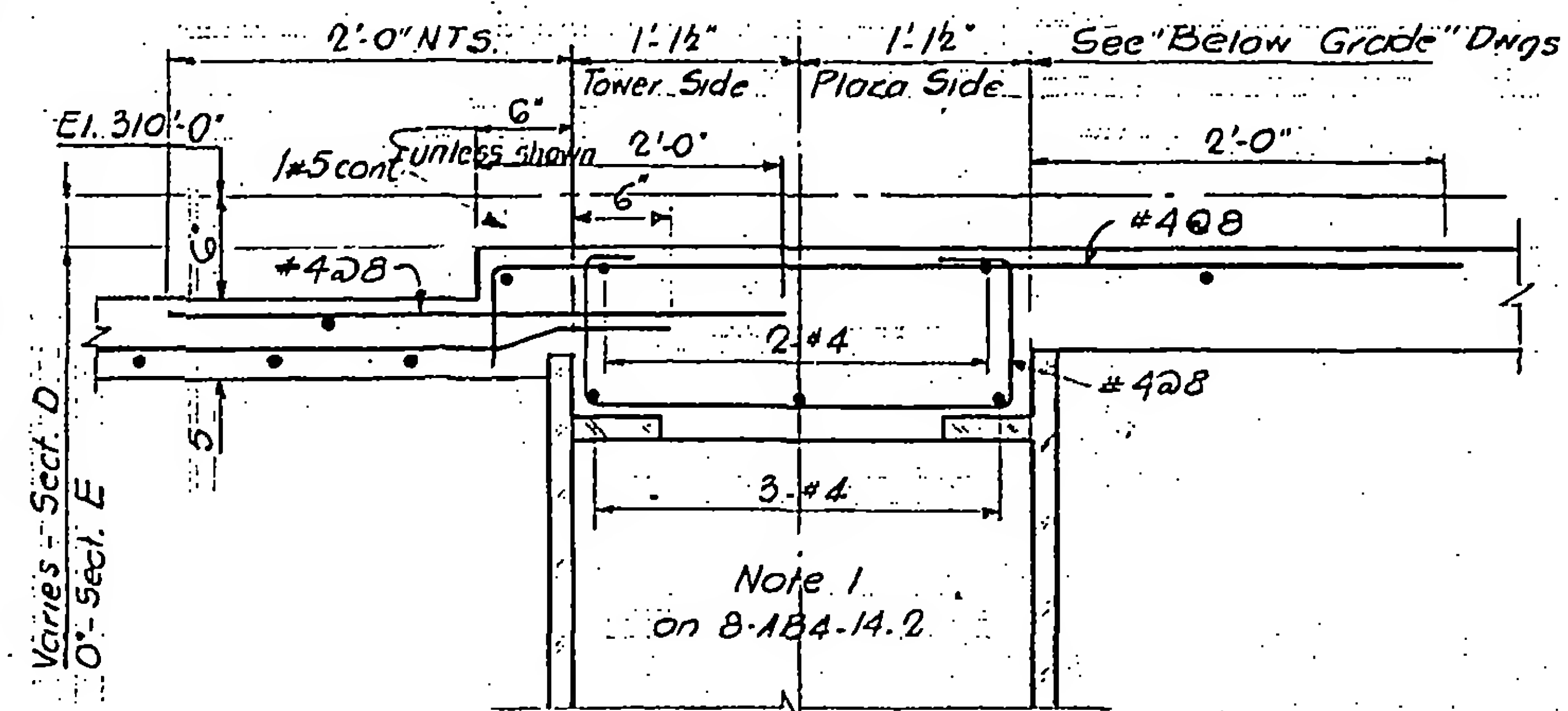
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

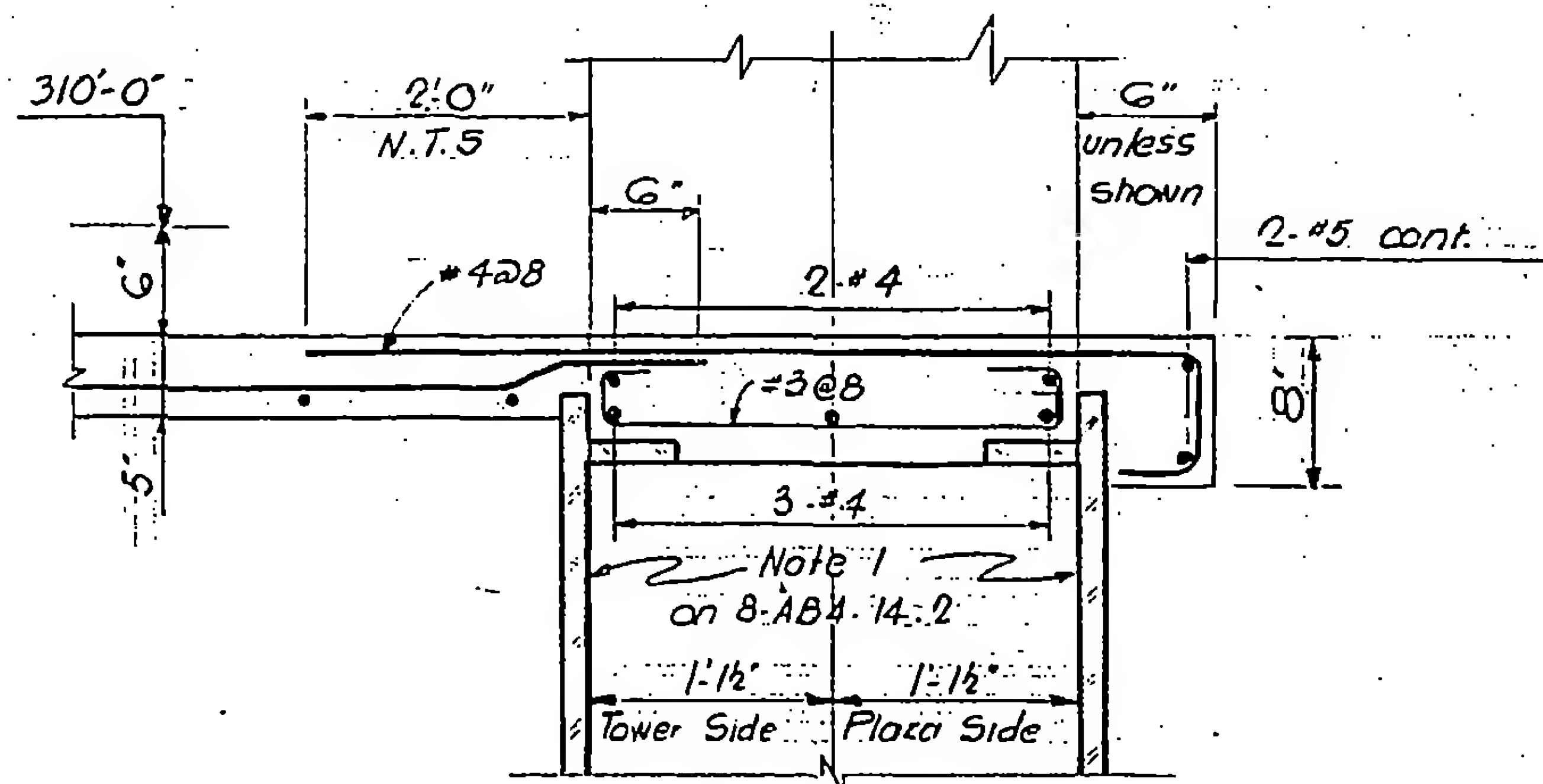
TITLE: SECTIONS AT FLOOR 1, EL. 310'-0"

DATE 5-1-68

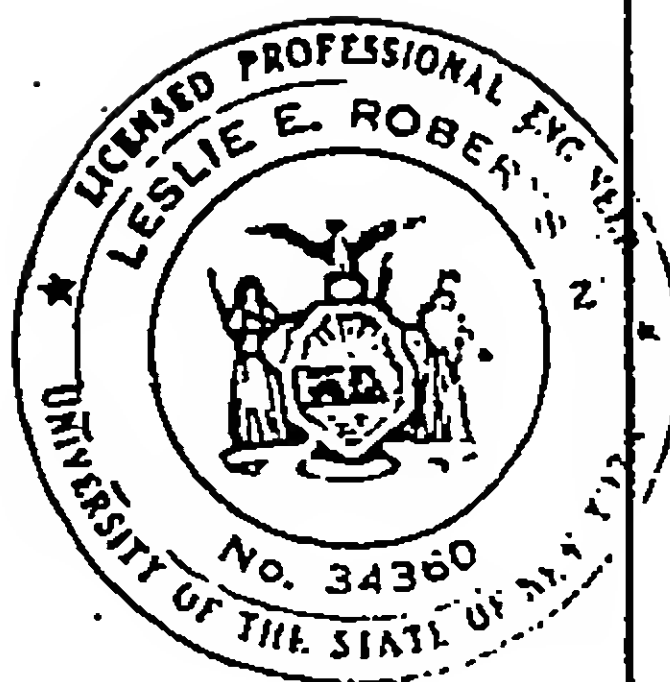
REVISIONS



Section D-D
Section E-E



Section F-F



8-AB4-14.3

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PROJECT

THE WORLD TRADE CENTER

TITLE

SECTIONS AT FLOOR 1, EL. 310'

DATE

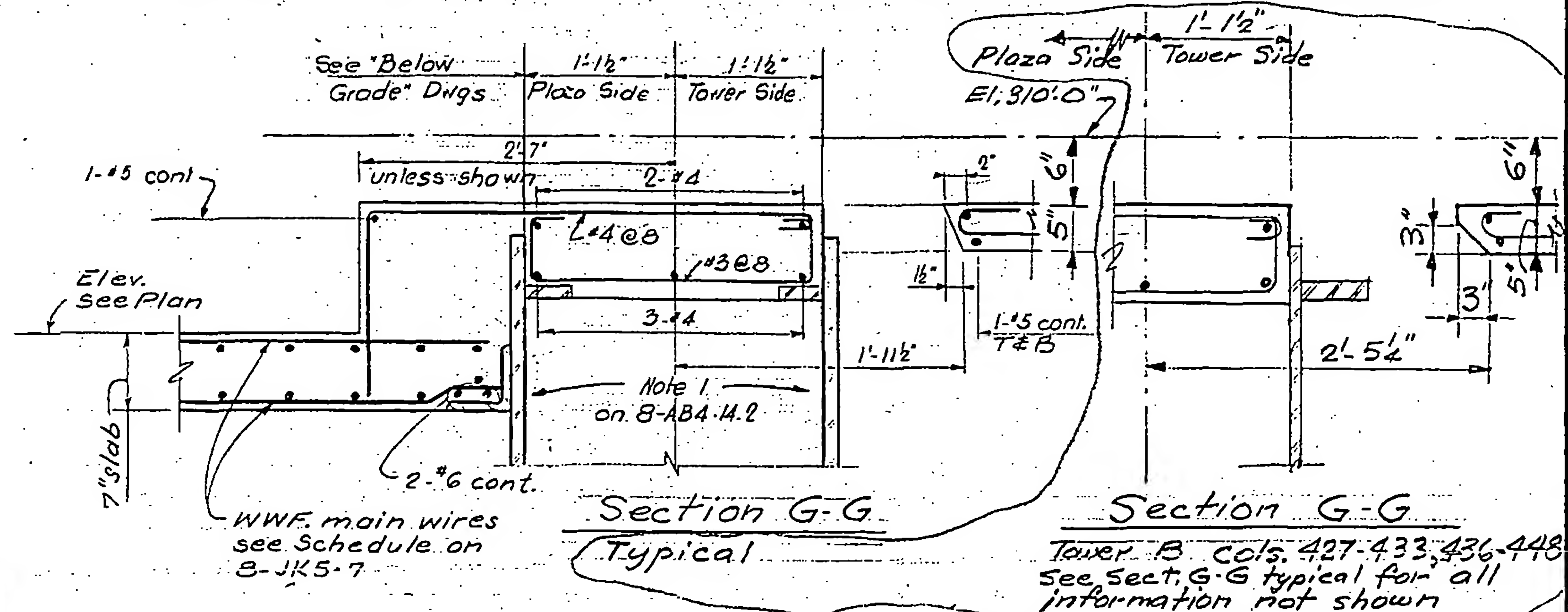
5-1-68

REVISIONS

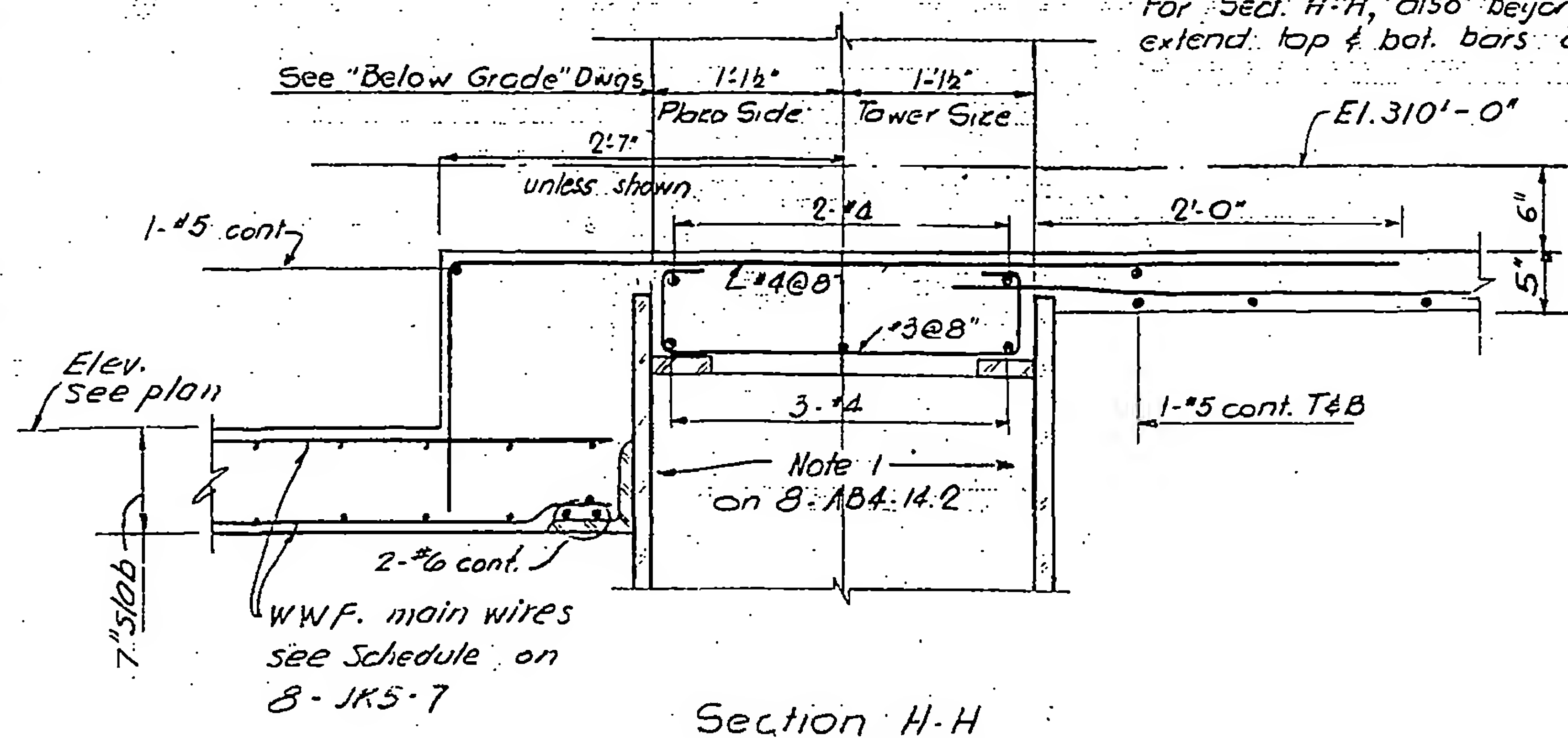
10/21/68

11/19/68

1/2/70



For Sect. H-H, also beyond opng, extend top & bot. bars as shown



8-AB4-14.4



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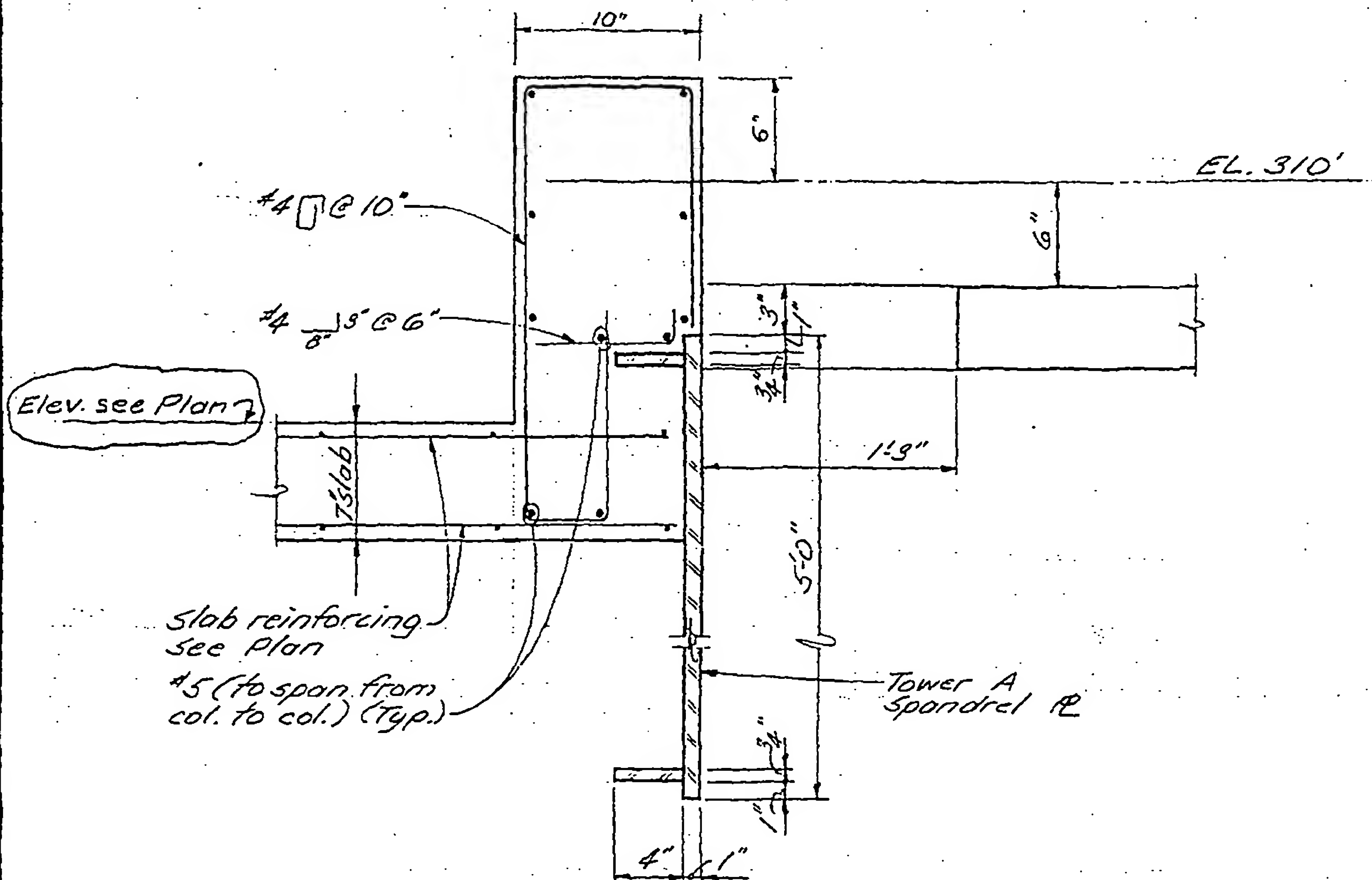
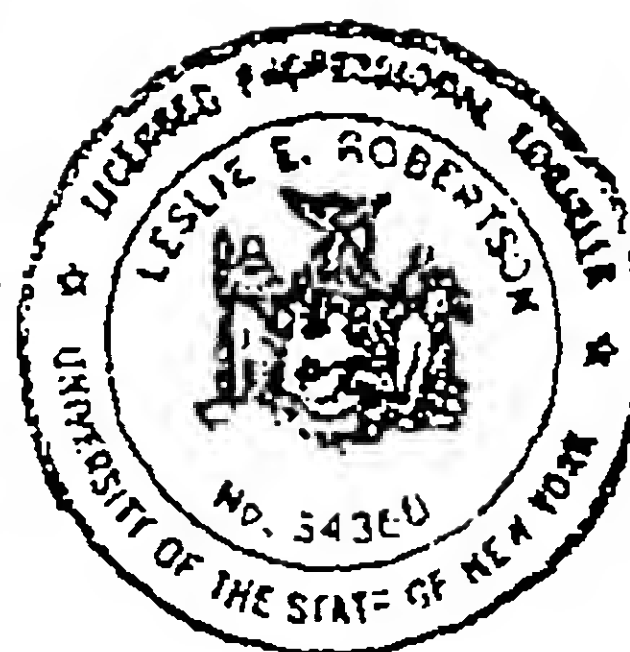
TITLE SECTIONS AT FLOOR 1, EL. 310'

DATE 10-21-66

REVISIONS

12-9-68

1-17-69

Section J-J

DESIGNED

DRAWN

S.C.

REVIEWED

E.L.

B-AB4-14.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

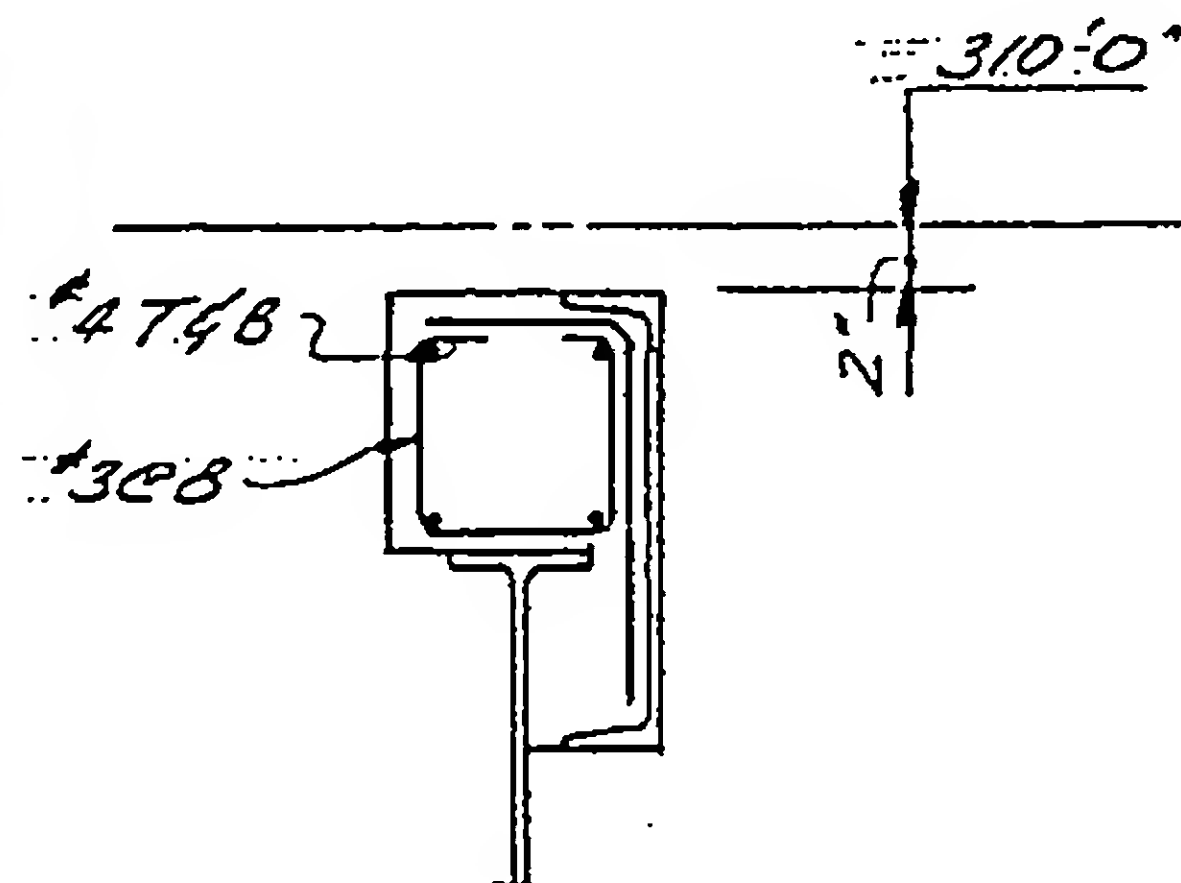
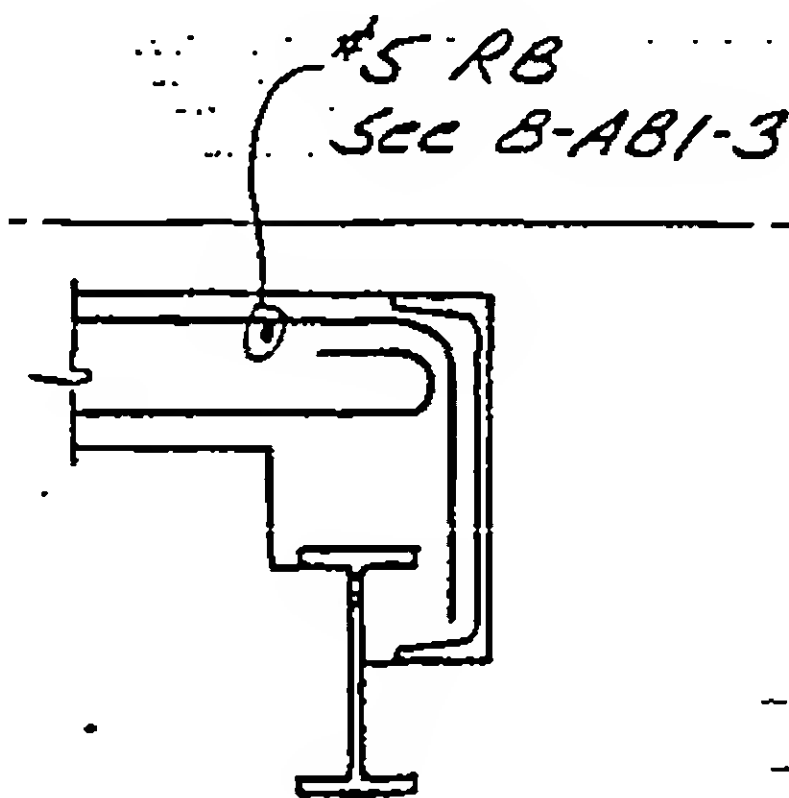
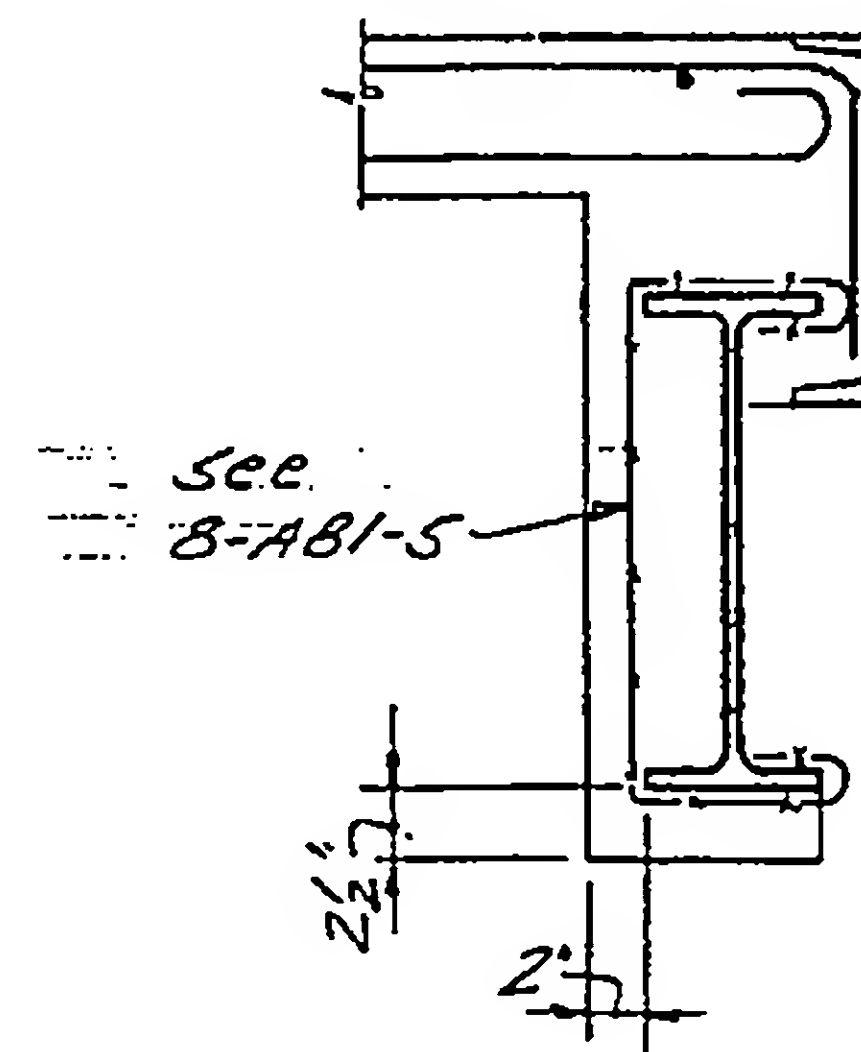
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

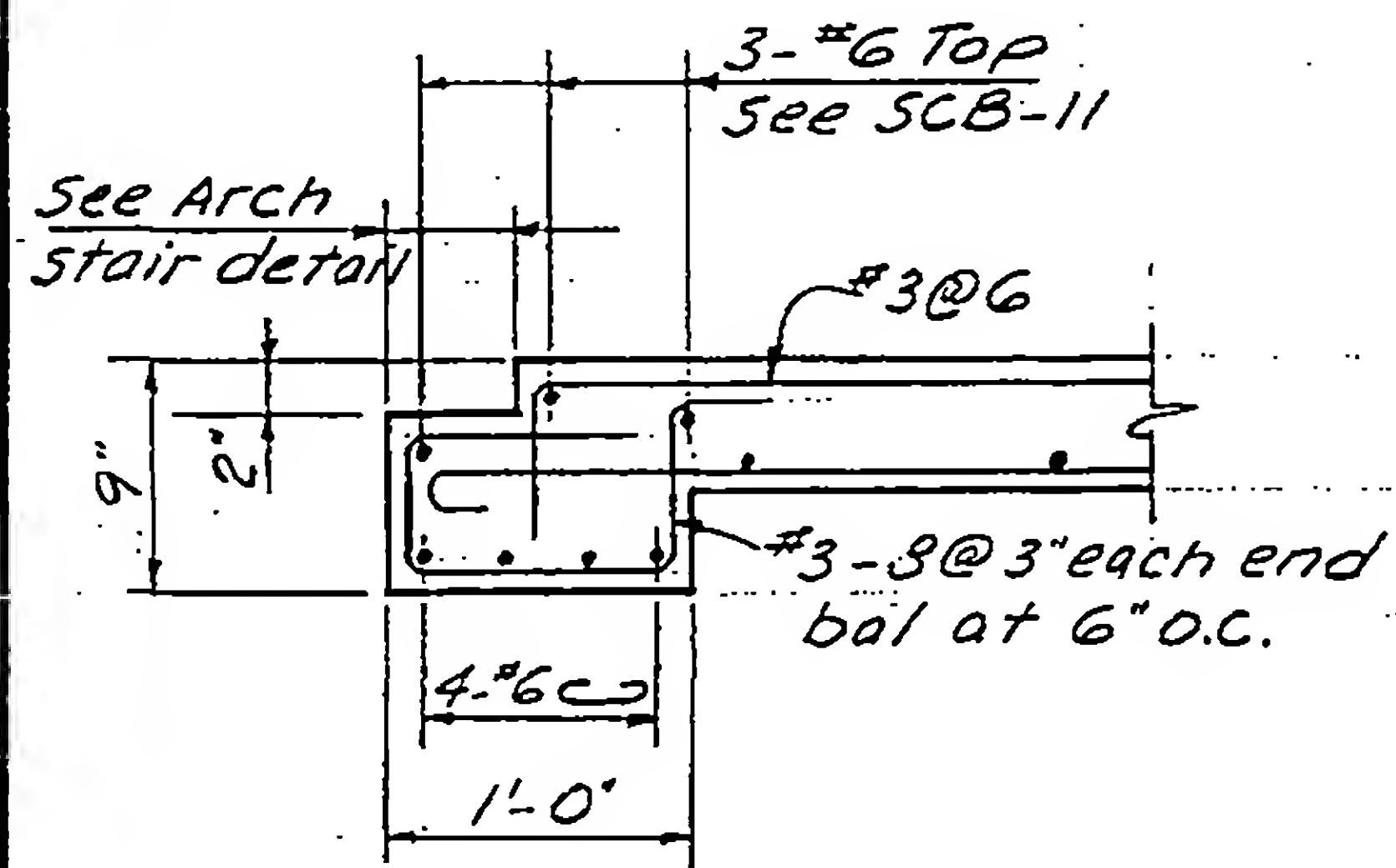
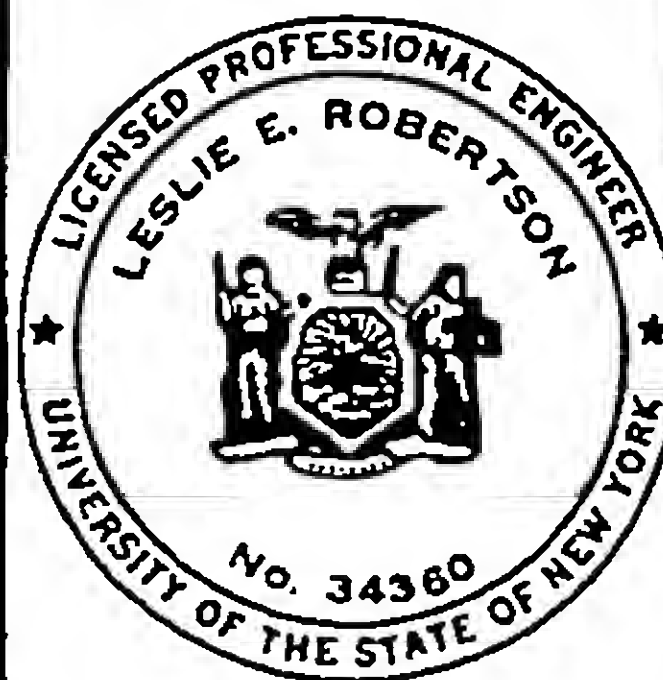
TITLE SECTIONS AT FLOOR 1, EL 310'

DATE 7-11-69

REVISIONS

SECTION K-KSECTION L-LSECTION M-M

Note to Sections K, L & M:
Use pea gravel concrete
wherever space
between channel
and top flange of
beam is 1 1/2" or less.

Section N-N

DESIGNED

DRAWN

REVIEWED

8-AB4-14.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

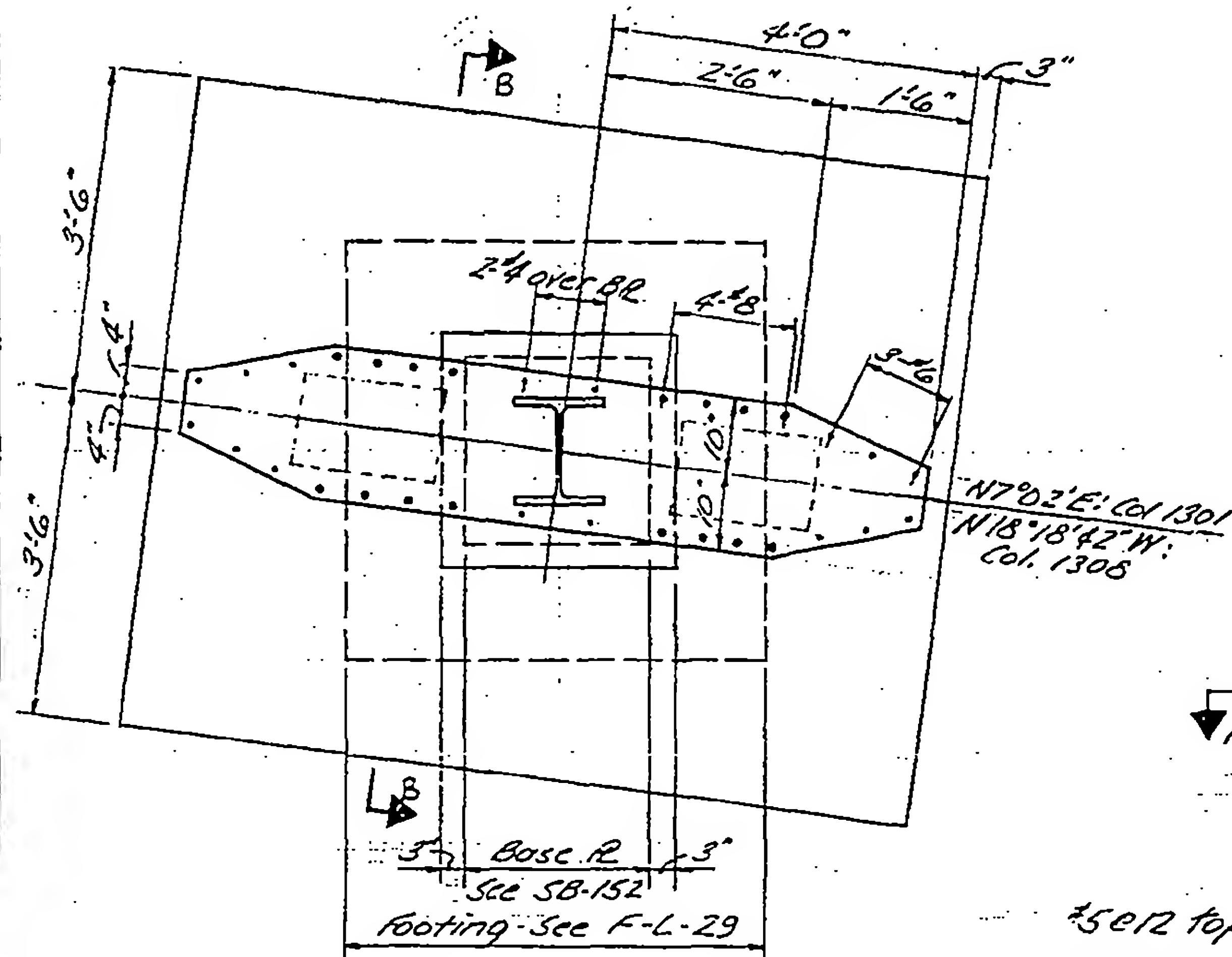
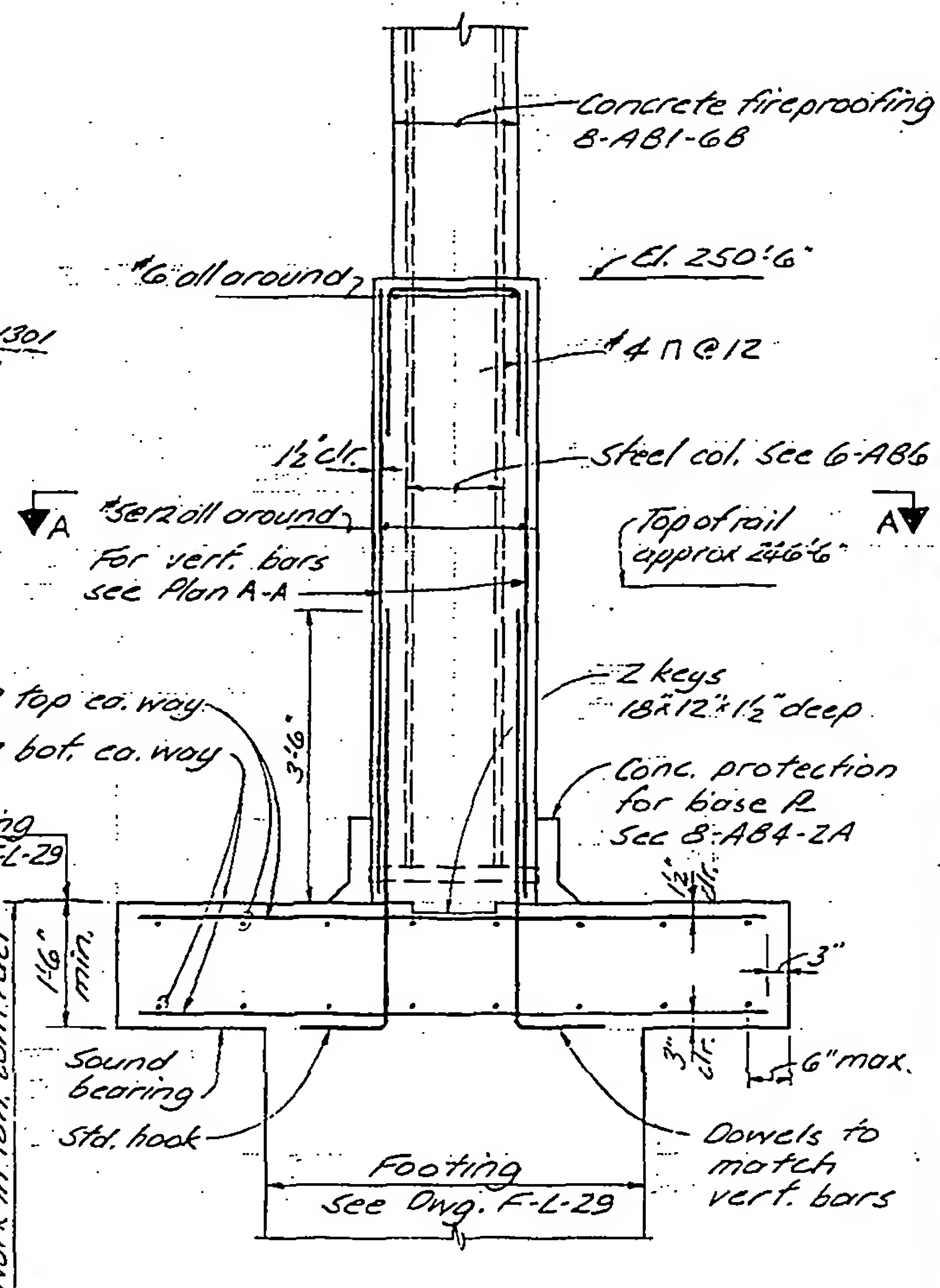
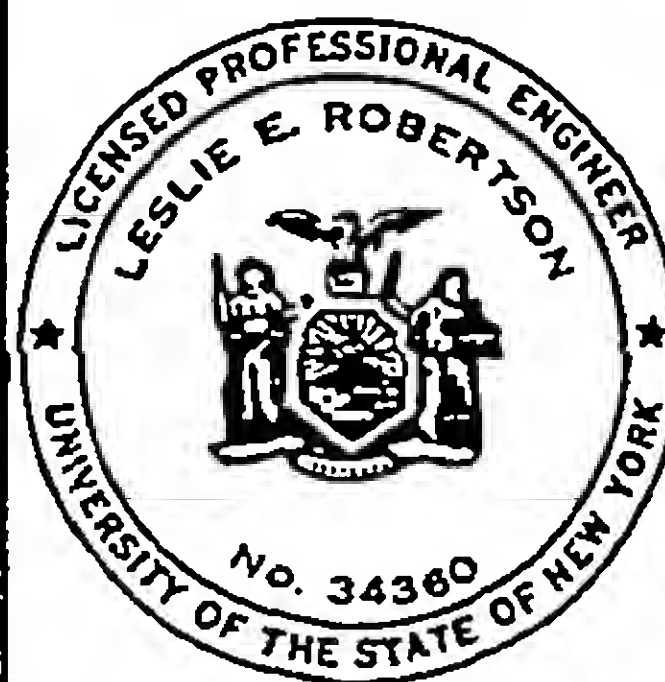
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TITLE BUFFER WALLS

DATE 3-25-69

REVISIONS

Sectional Plan A-ACol. 1301 shown
Col. 1308 similarSection B-B

DESIGNED

A.L.A.

DRAWN

J. Adams

REVIEWED

8-84-19,1

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

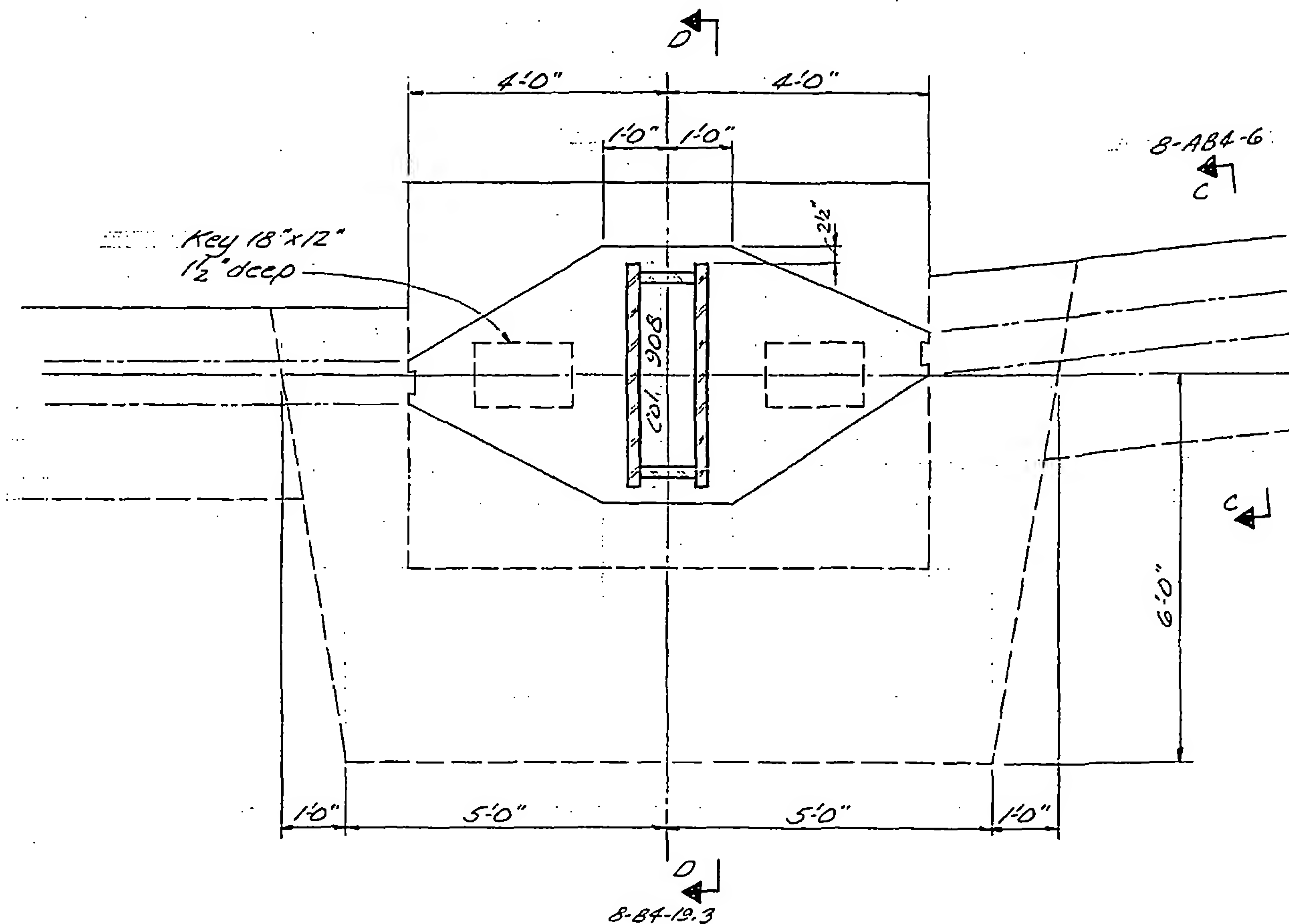
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PROJECT THE WORLD TRADE CENTER

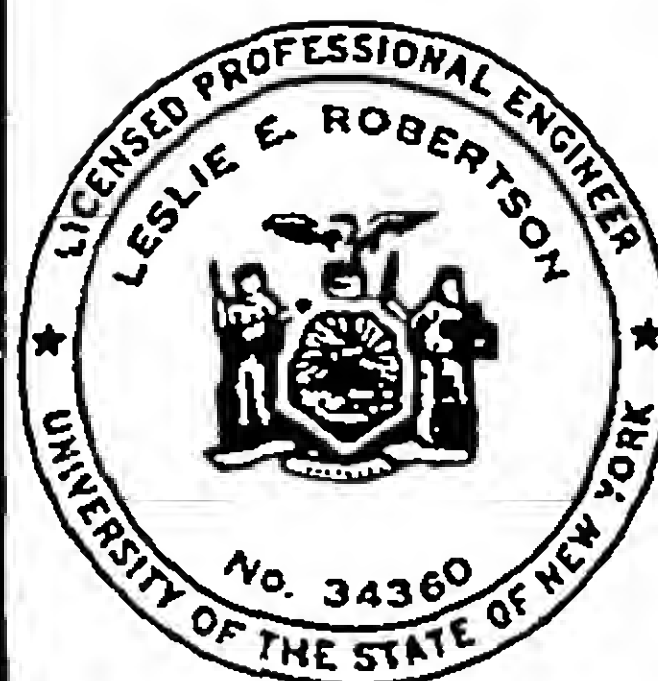
TITLE BUFFER WALLS

DATE 3-25-69

REVISIONS



Sectional Plan C-C



DESIGNED

A.L.A.

DRAWN

J. Adams

REVIEWED

8-B4-19.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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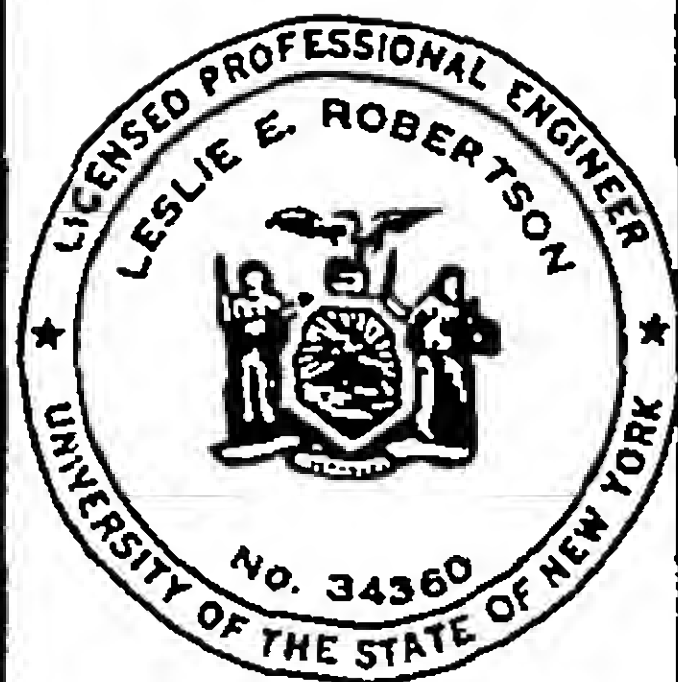
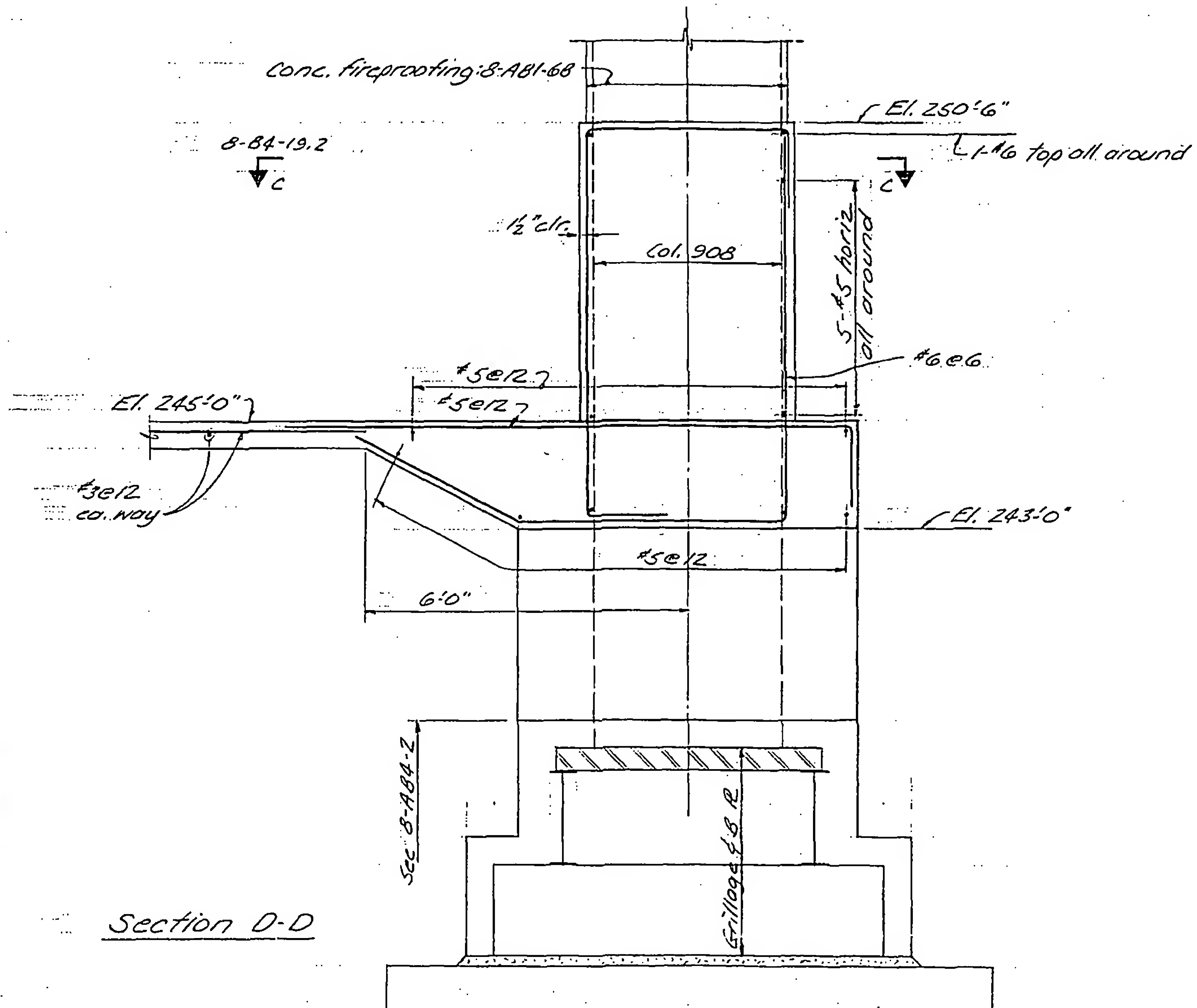
TITLE

BUFFER WALLS

DATE

3-25-69

REVISIONS



DESIGNED

A.L.A.

DRAWN

J. Adams

REVIEWED

8-B4-19.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

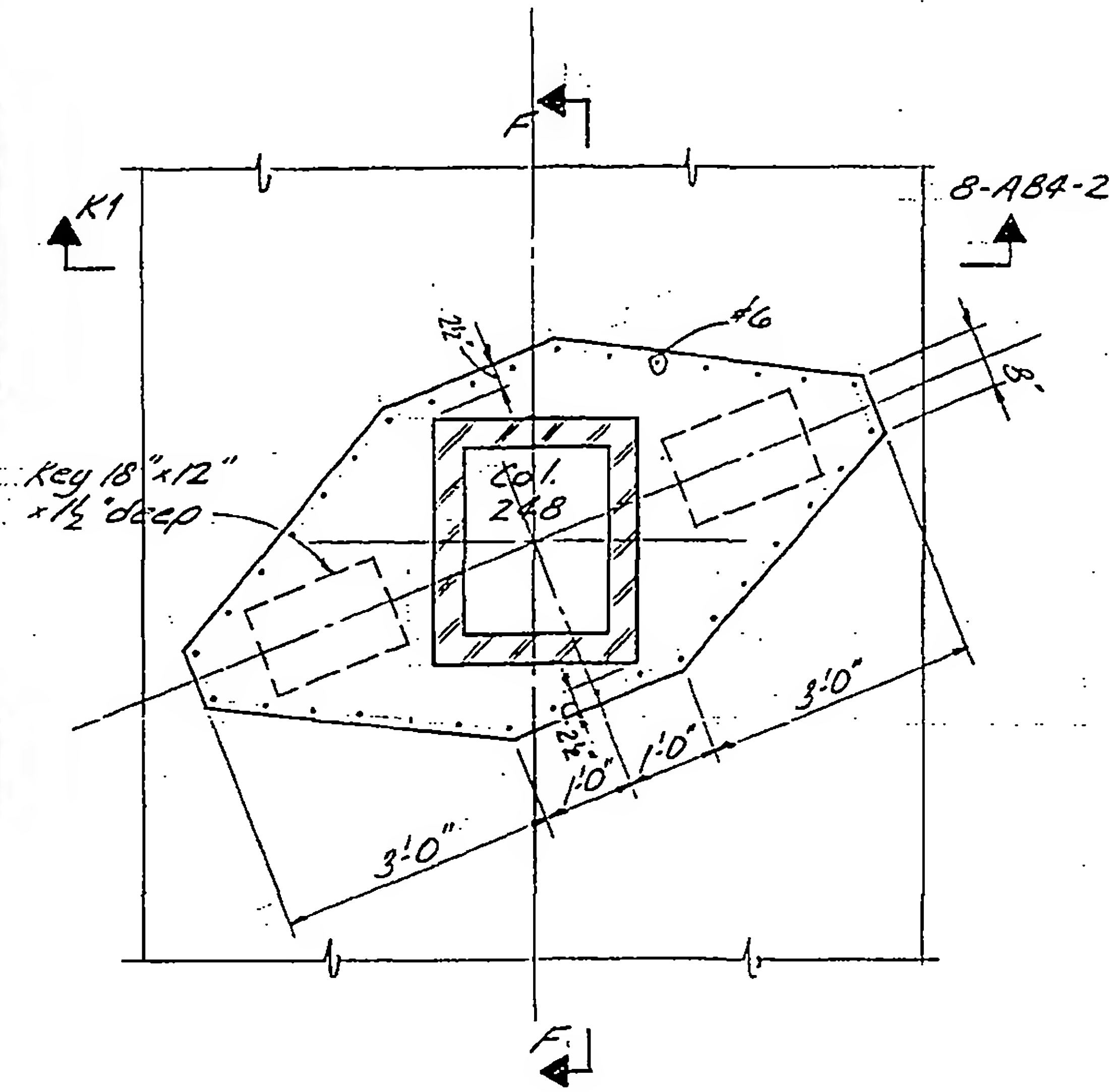
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

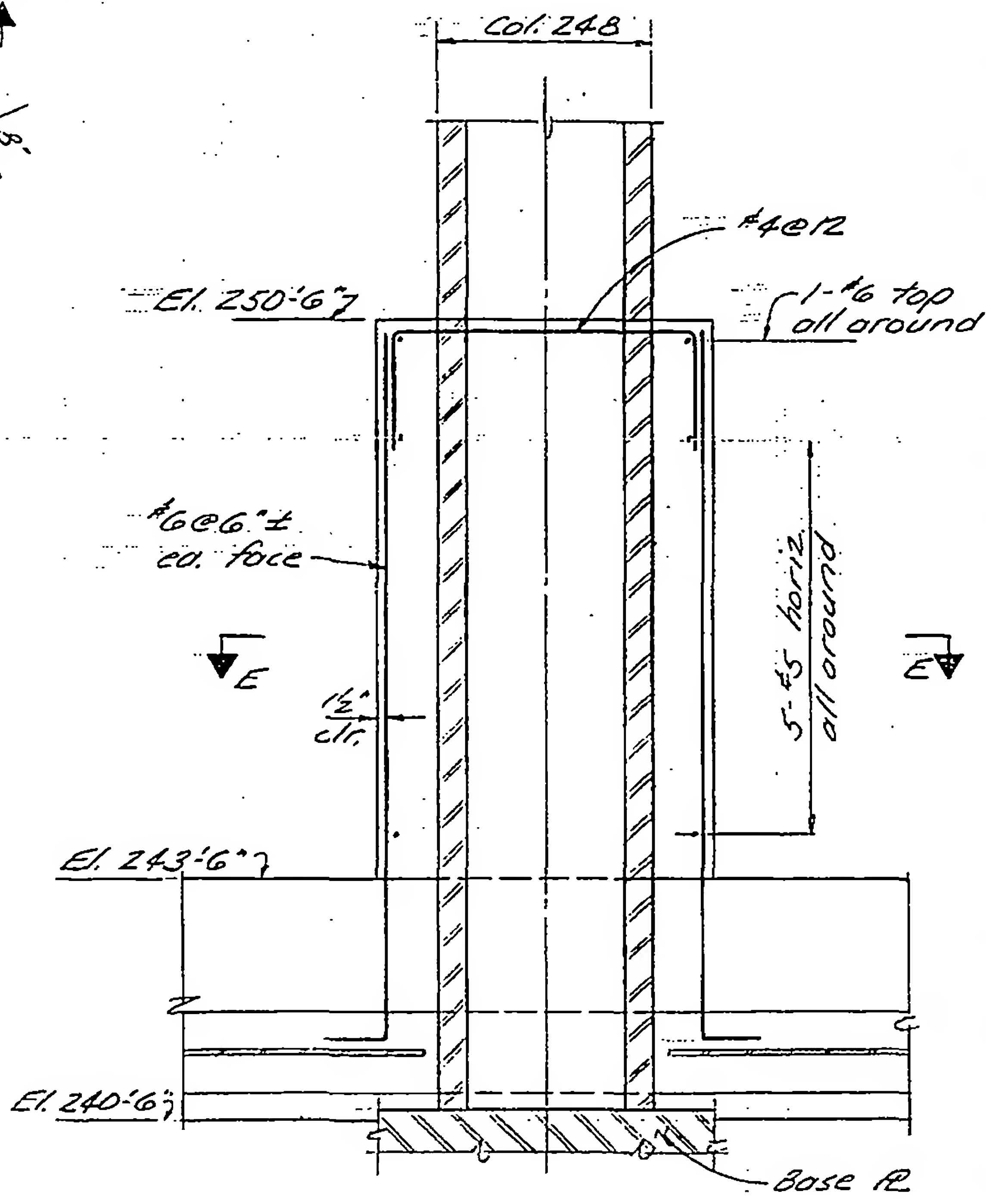
TITLE BUFFER WALLS

DATE 3-25-69

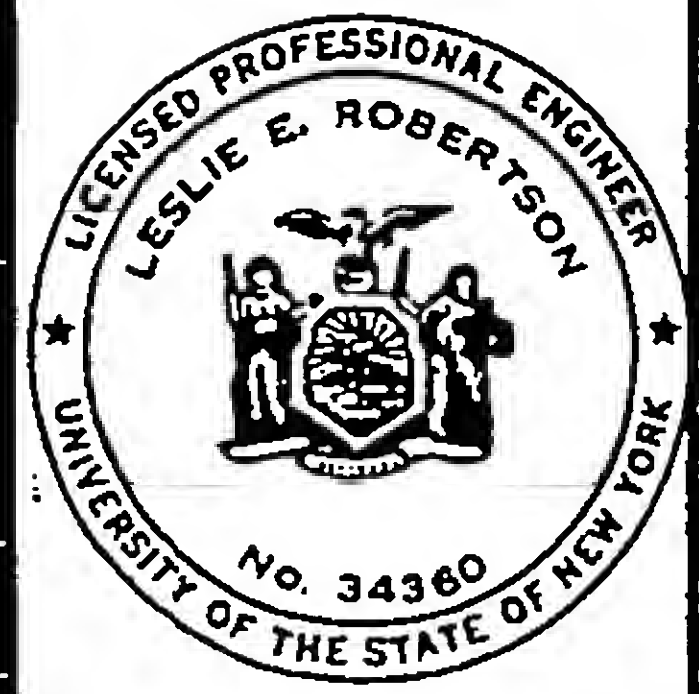
REVISIONS



Sectional Plan E-E



Section F-F



DESIGNED
A.L.A.
DRAWN
J. Adams
REVIEWED

8-84-19.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

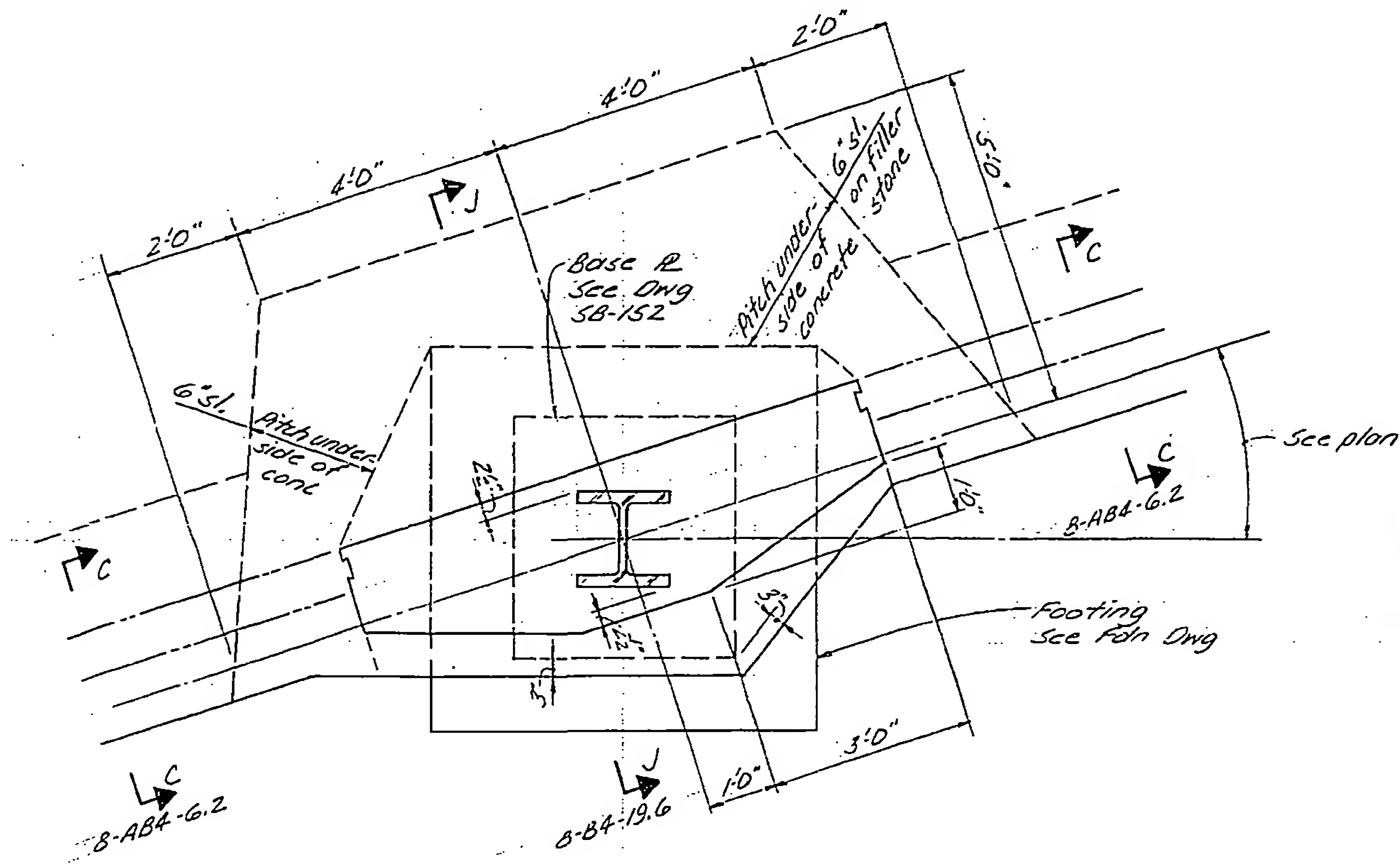
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE BUFFER WALLS

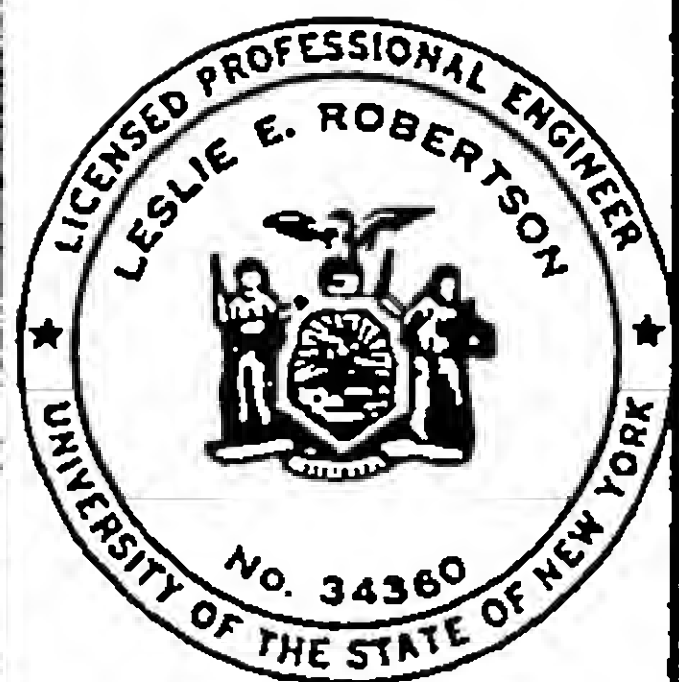
DATE 3-25-69

REVISIONS



Sectional Plan G-G

Col. 1207 shown
Colis. 1205, 1206 similar



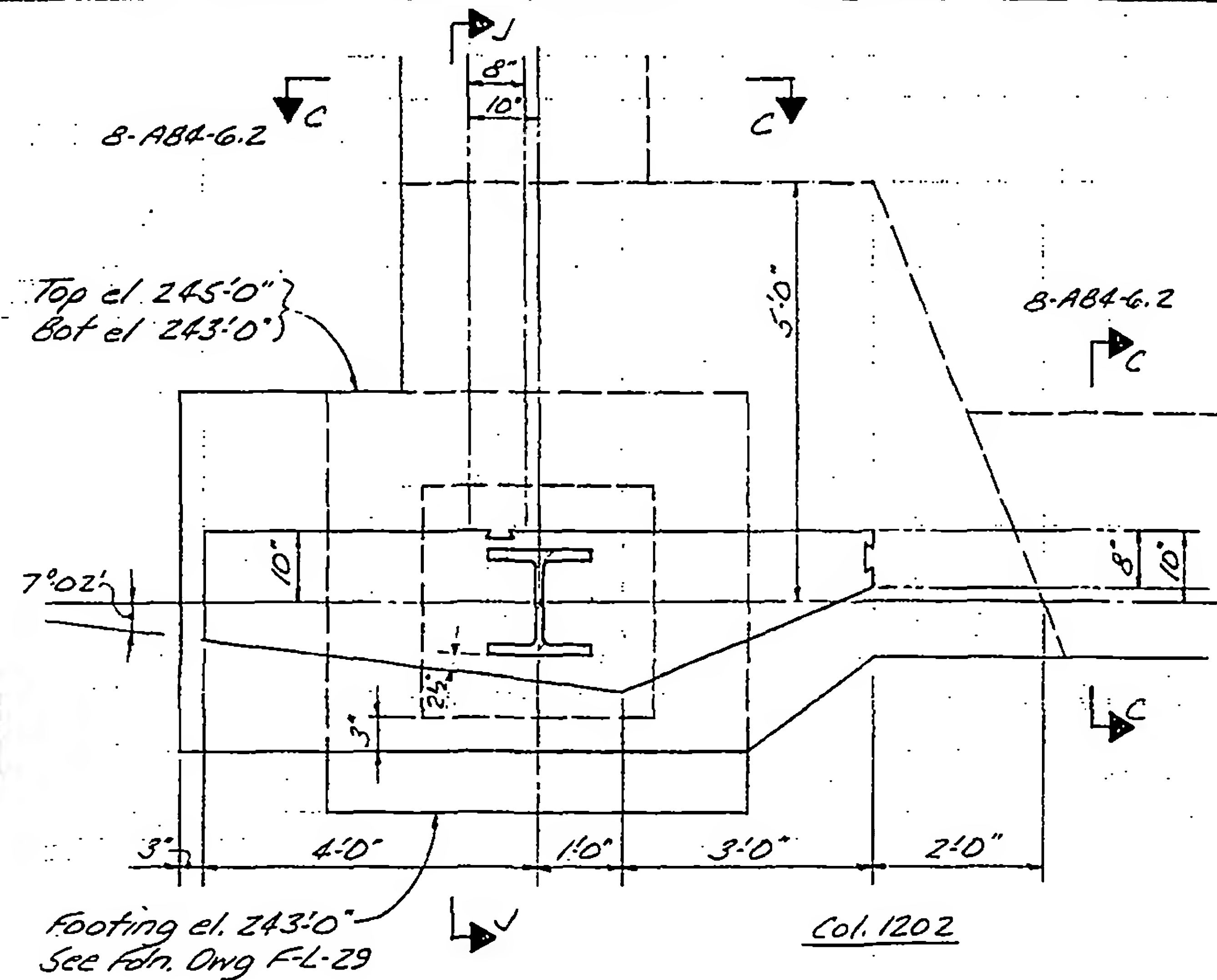
DESIGNED
A.L.A.

DRAWN
J. Adams

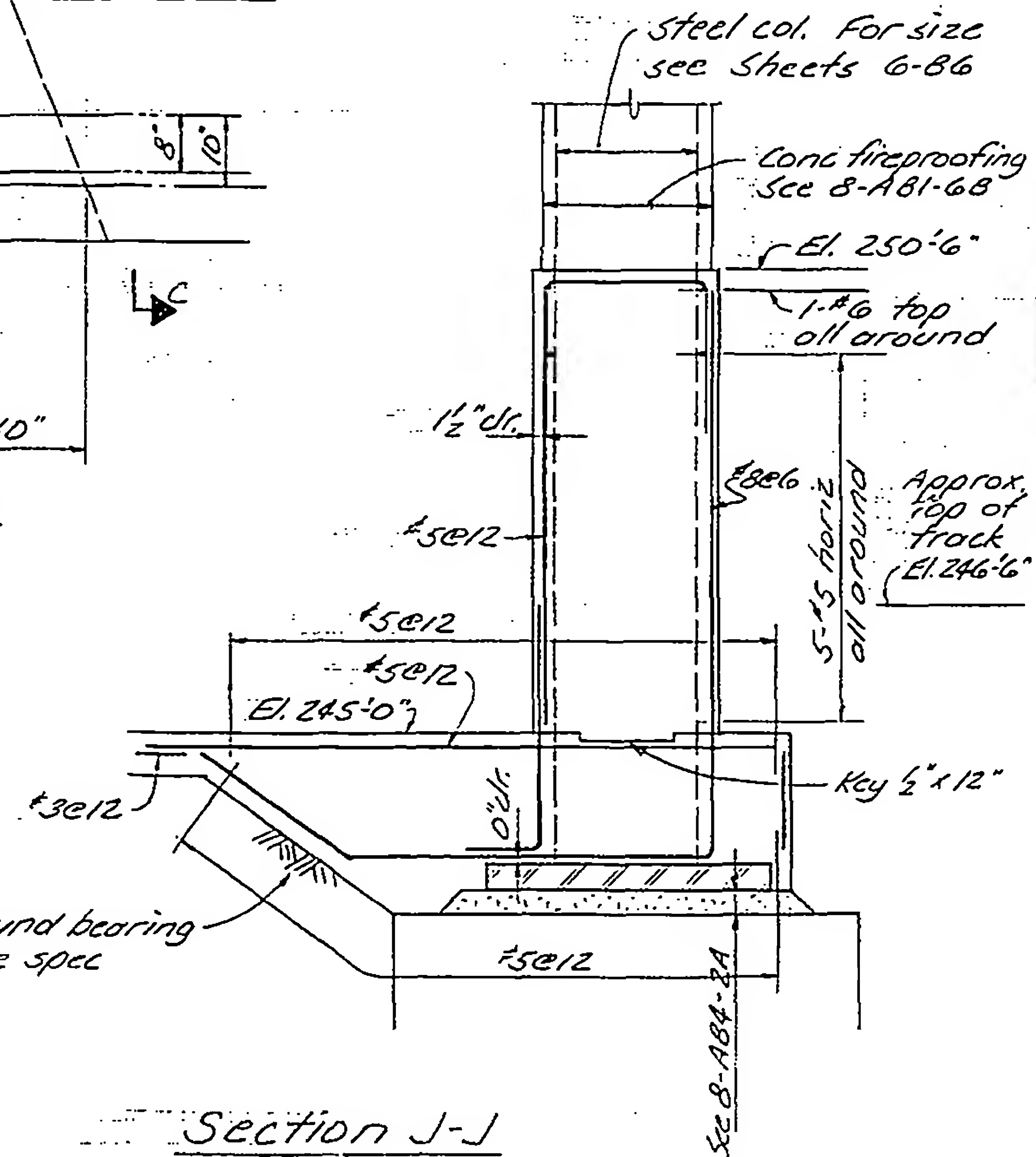
REVIEWED

8-B4-19.5

REVISIONS

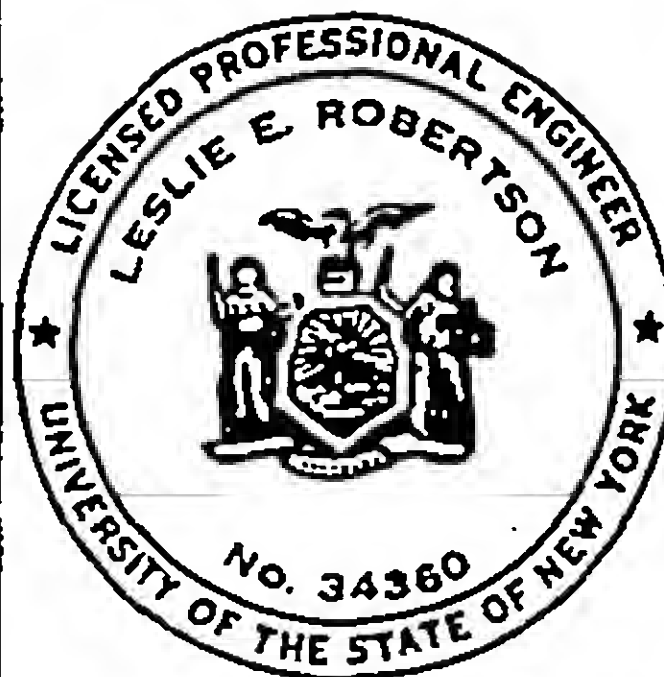


Sectional Plan H-H



Section J-J

8-84-19.6



DESIGNED

A.L.A.

DRAWN

J. Adams

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

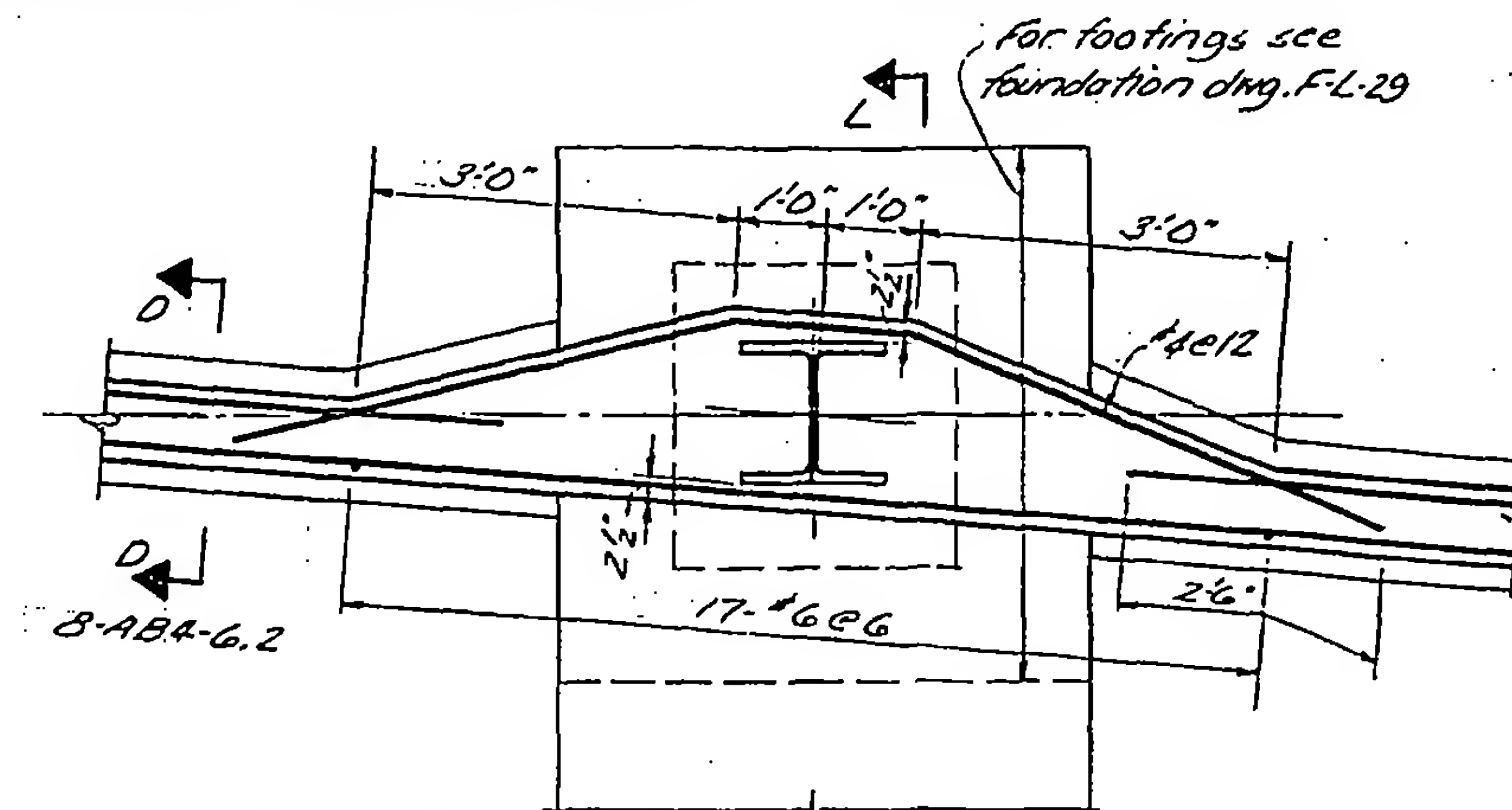
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE BUFFER WALLS

DATE 3-25-69

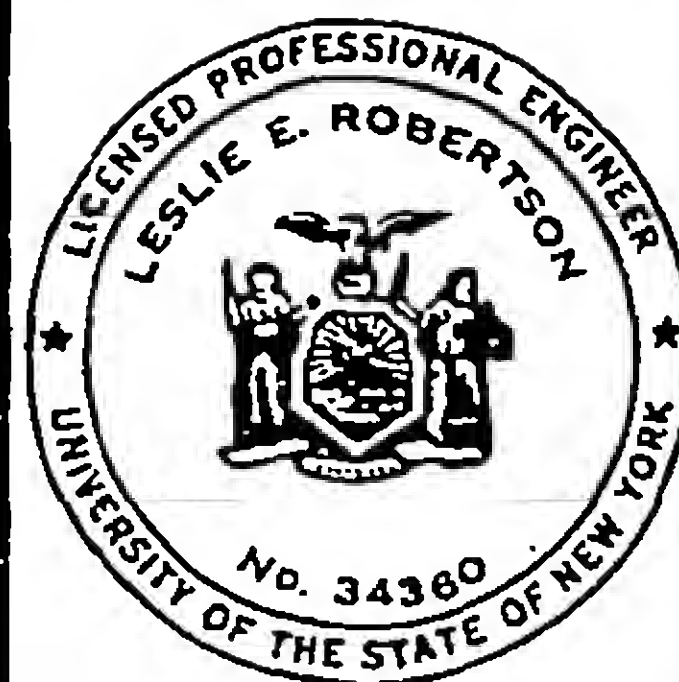
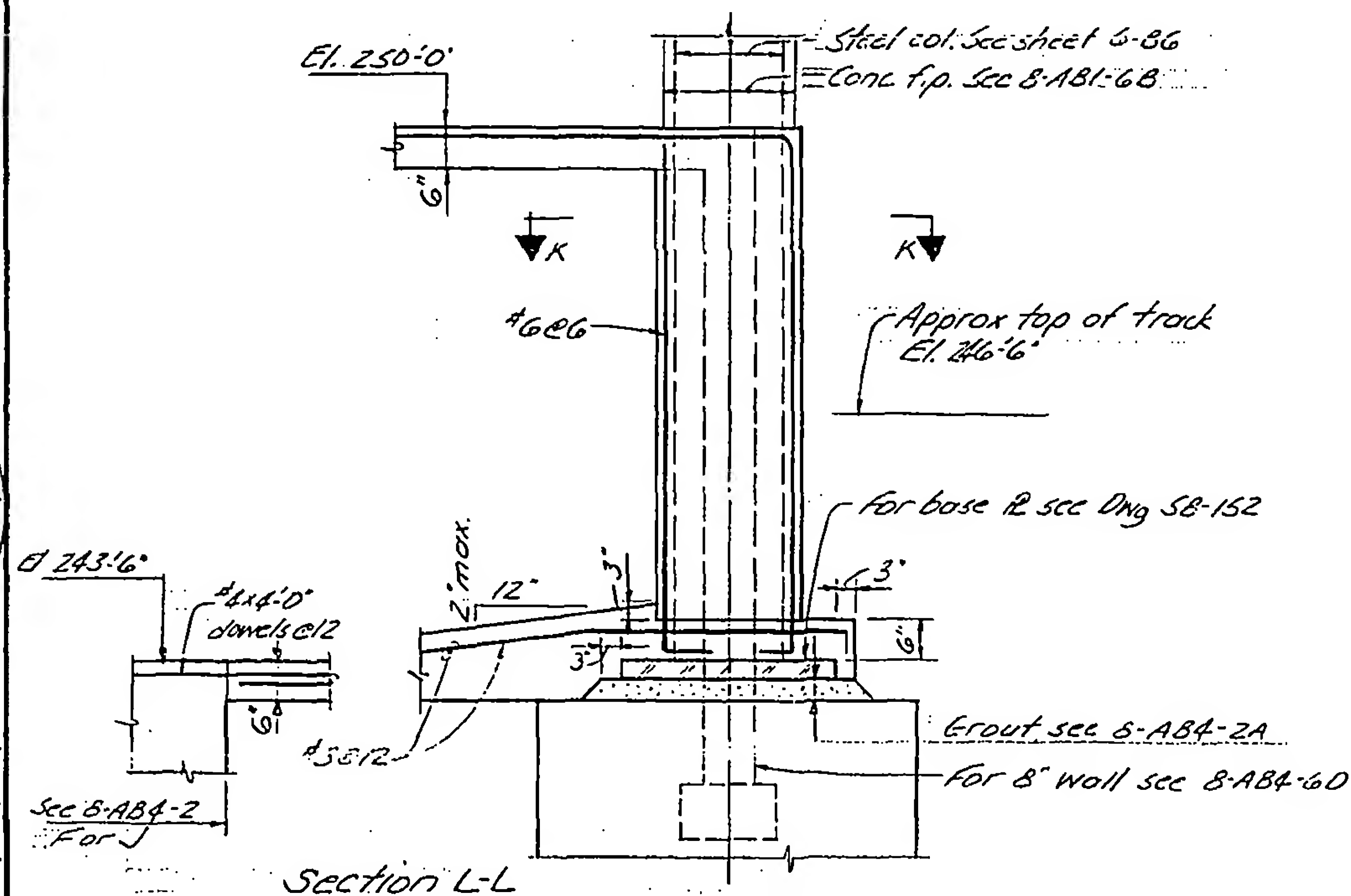
REVISIONS



Notes:

1. Reinforcing not shown same as Sect. D on B-AB4-6.2
2. Where construction must be carried out in two stages, use Det. B-AB4-200

Sectional Plan K-K
Col. 1405 shown. Cols. 1406 & 1407 similar



DESIGNED

A.L.A.

DRAWN

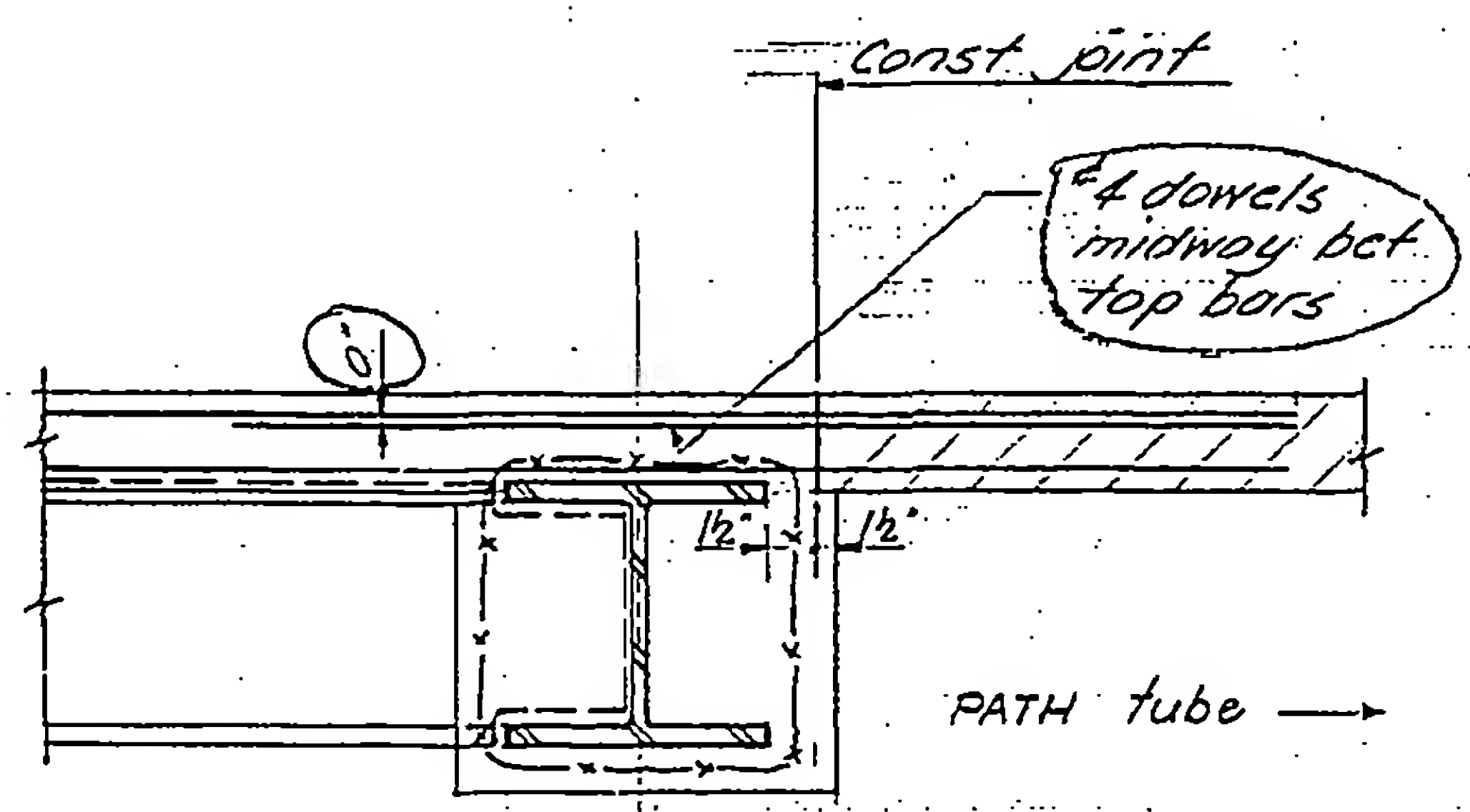
J. Adams

REVIEWED

B-84-19.7

REVISIONS

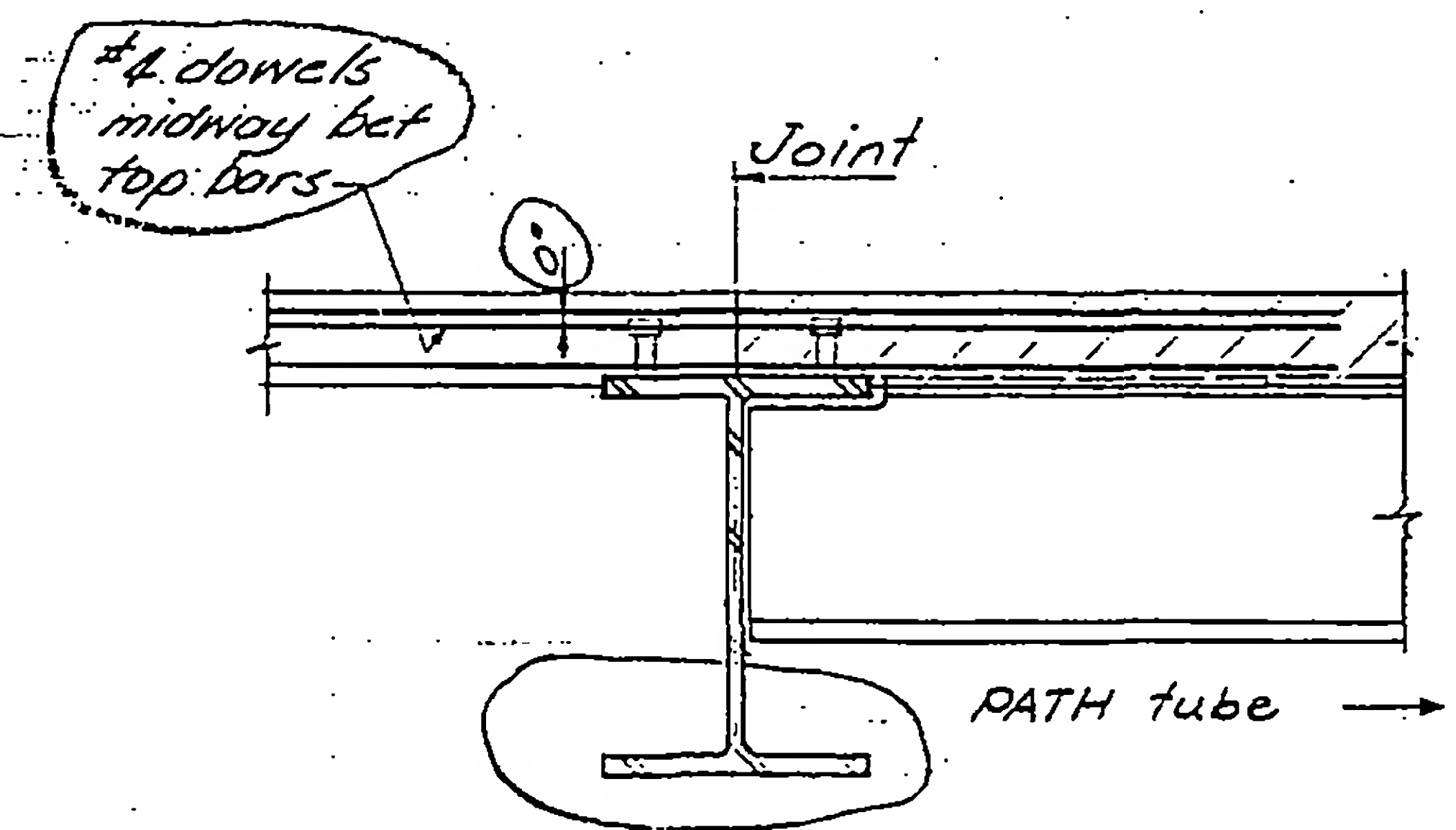
8-20-68
4-25-69



For rein and dimensions of
FR. See 8-AB1-5

Section A-A

Typical where there are no beams
normal to joint on PATH tube side.

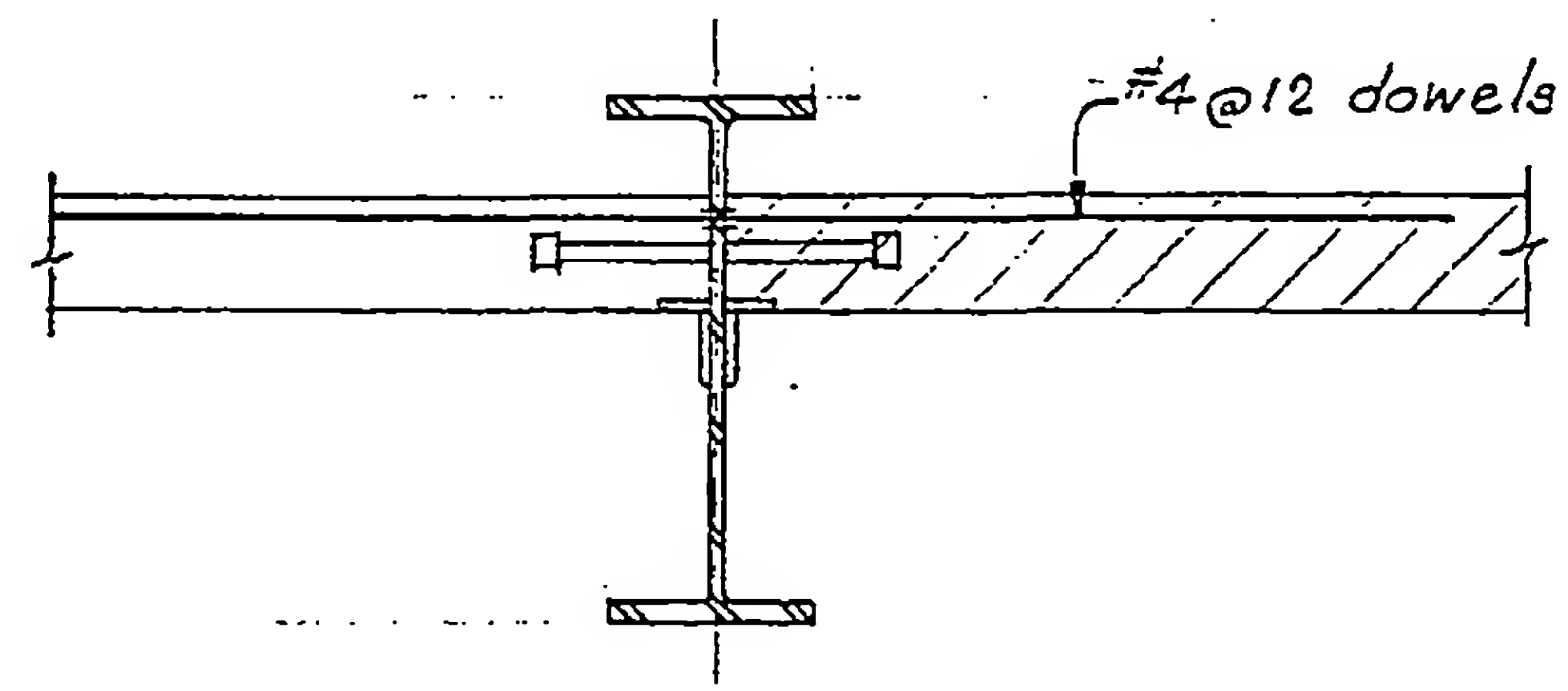


Section B-B

Typical for joint over deep beam

Notes:

1. Top and bottom reinforcing as noted or shown in plan.
2. Hatching indicates concrete placed last.
3. Bars crossing joint shall be bent parallel to the concrete surface as required to clear PATH tube, caissons, and other obstructions, and carefully re-straightened before placing concrete on PATH tube side.



Section C-C

Typical where steel flange is above slab.



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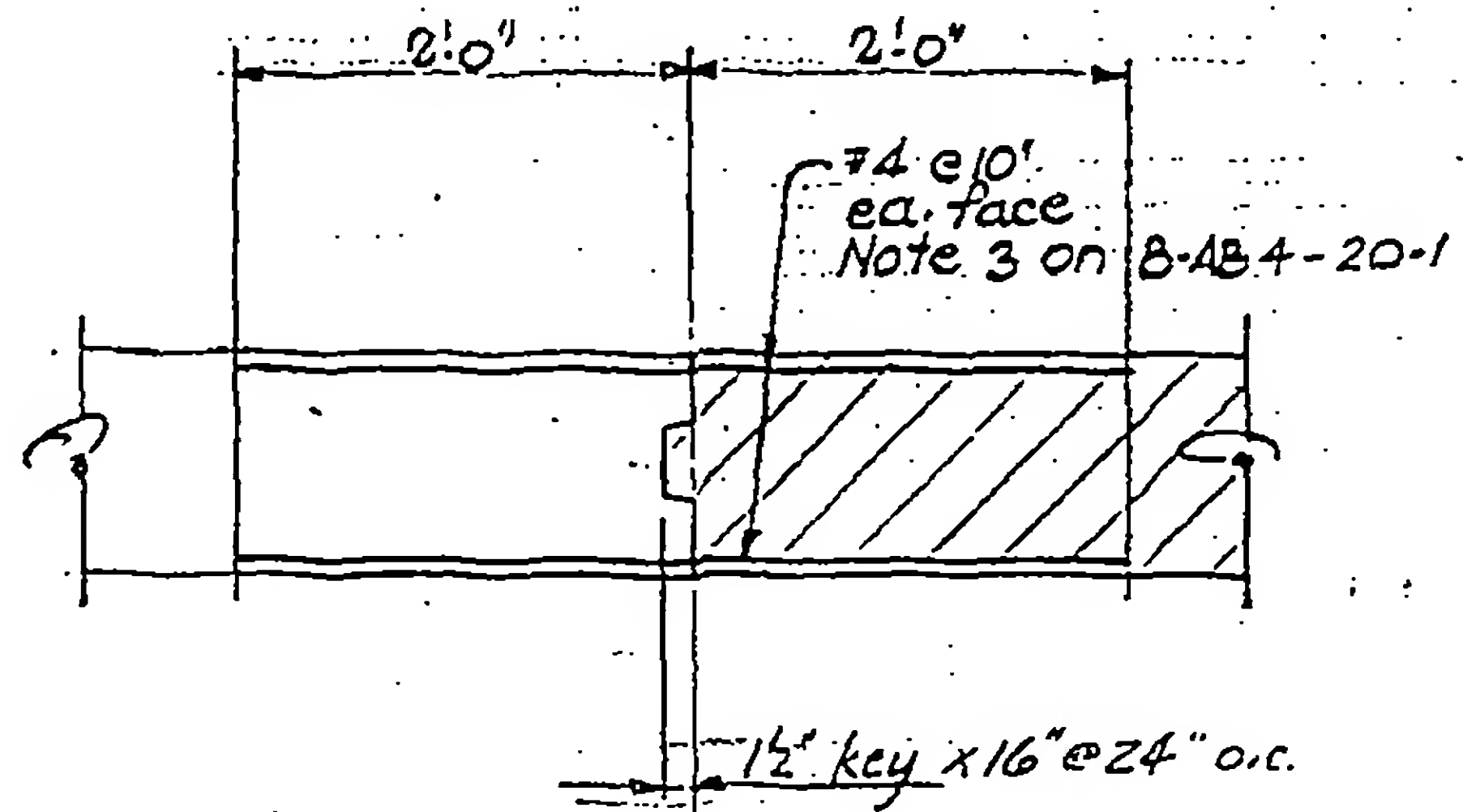
TITLE CONSTRUCTION JOINTS AT EXISTING PATH TUBE

DATE 5-1-68

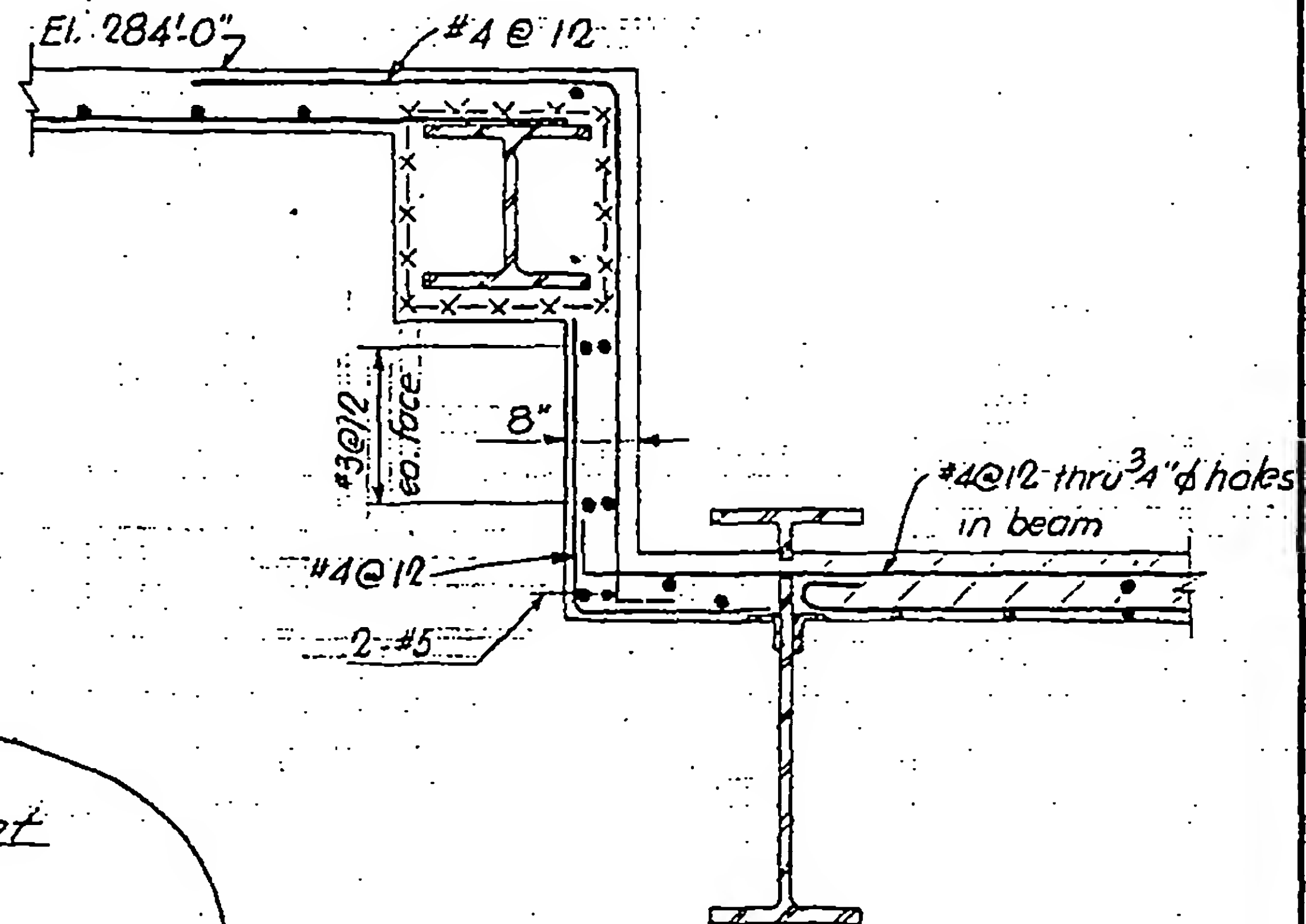
REVISIONS

4-25-69

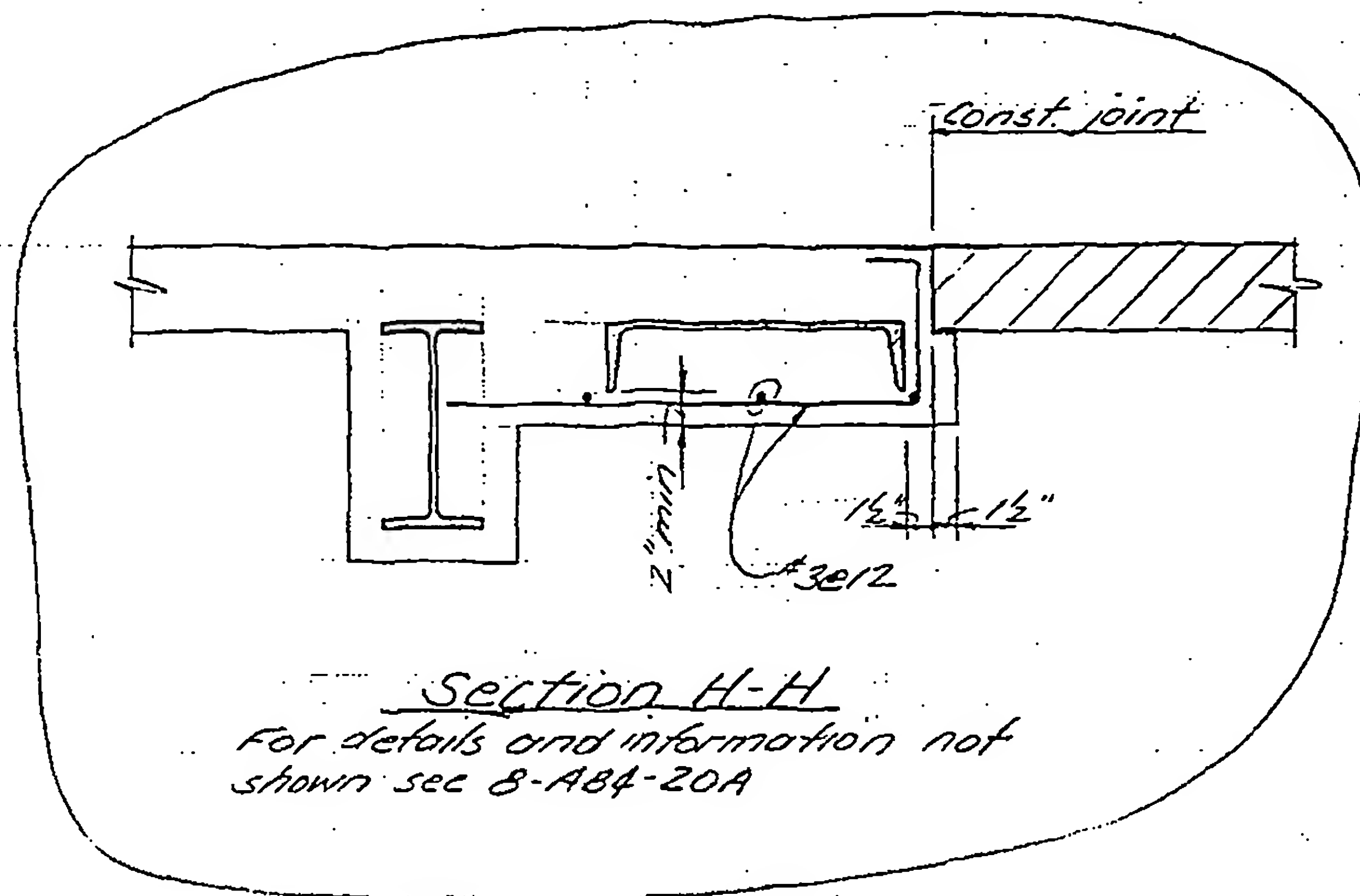
8-5-69



Sectional Plan D-D
Typical for concrete walls



Section E-E



Section H-H
For details and information not
shown see 8-AB4-20A



W.A. Brewer

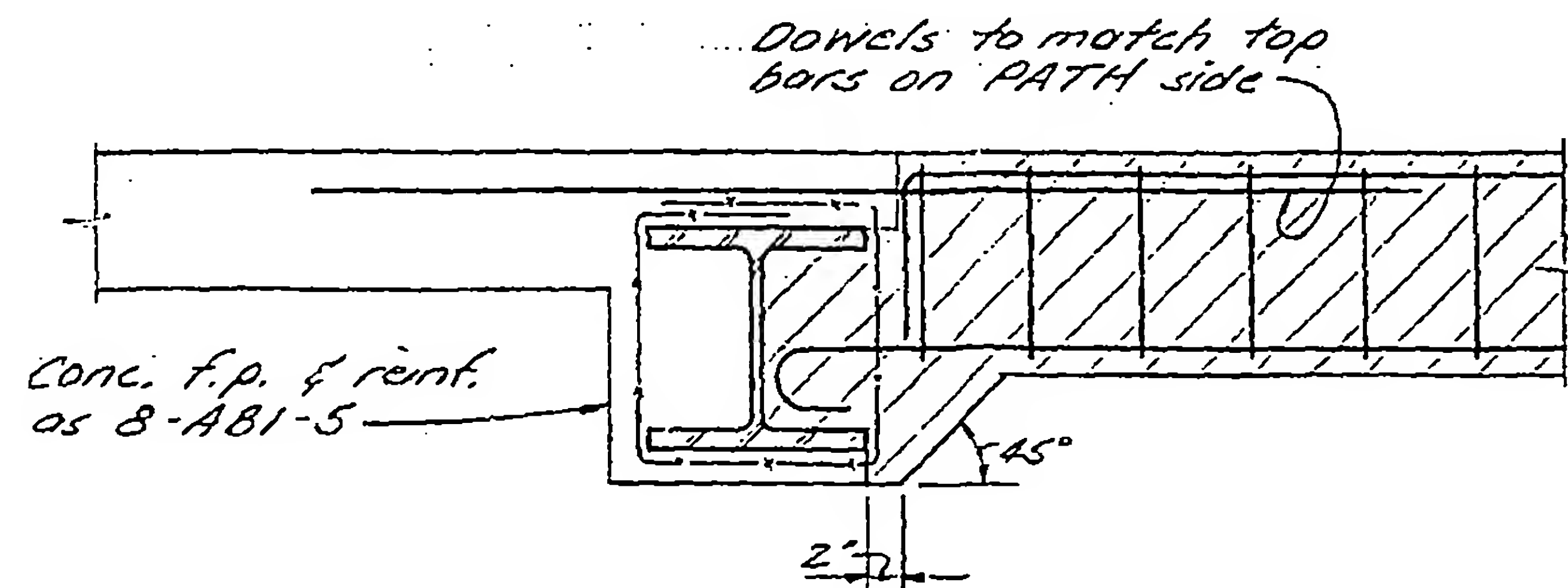
8-AB4-20.2

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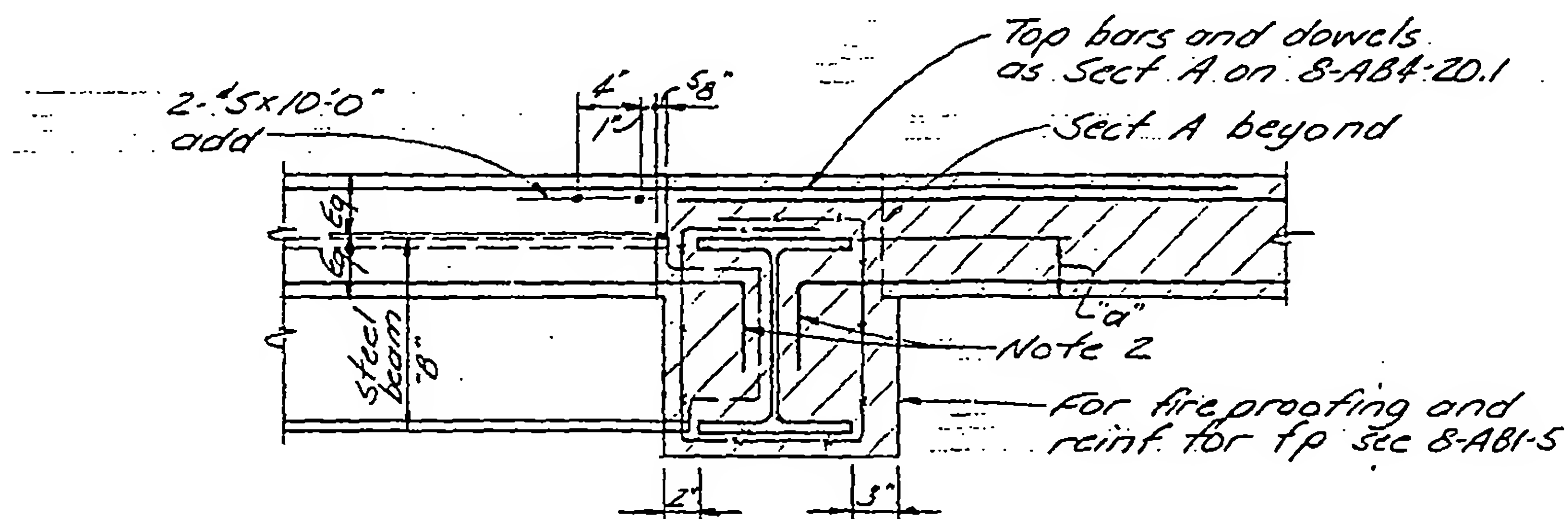
TITLE CONSTRUCTION JOINTS AT EXISTING PATH TUBE

DATE 4-25-69

REVISIONS



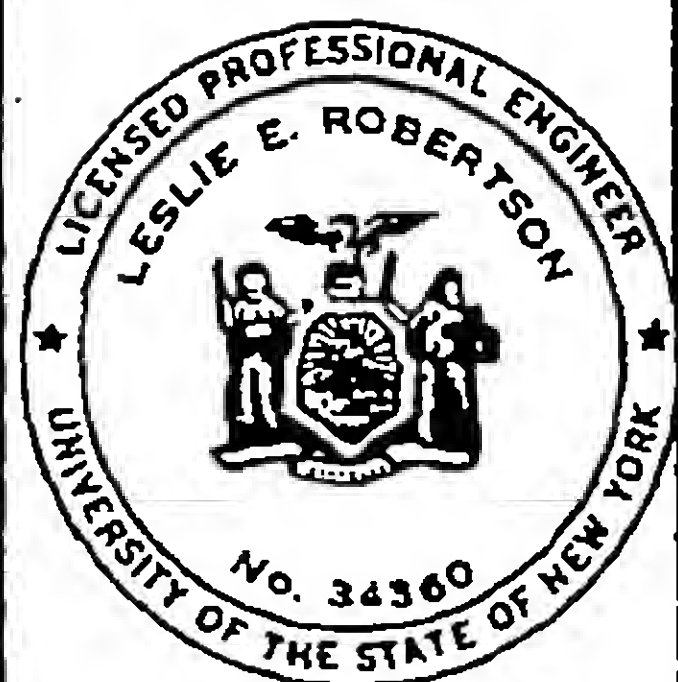
Section F-F



Section G-G

Notes to Sect. G-G:

1. Use this sect for a length of 5'-0" centered on steel beam "B"
2. Where depth of slab soffit below steel flange (dimension "a") is 2" or less, extend bottom steel across joint; do not hook



DESIGNED

ALA.

DRAWN

J. Adams

REVIEWED

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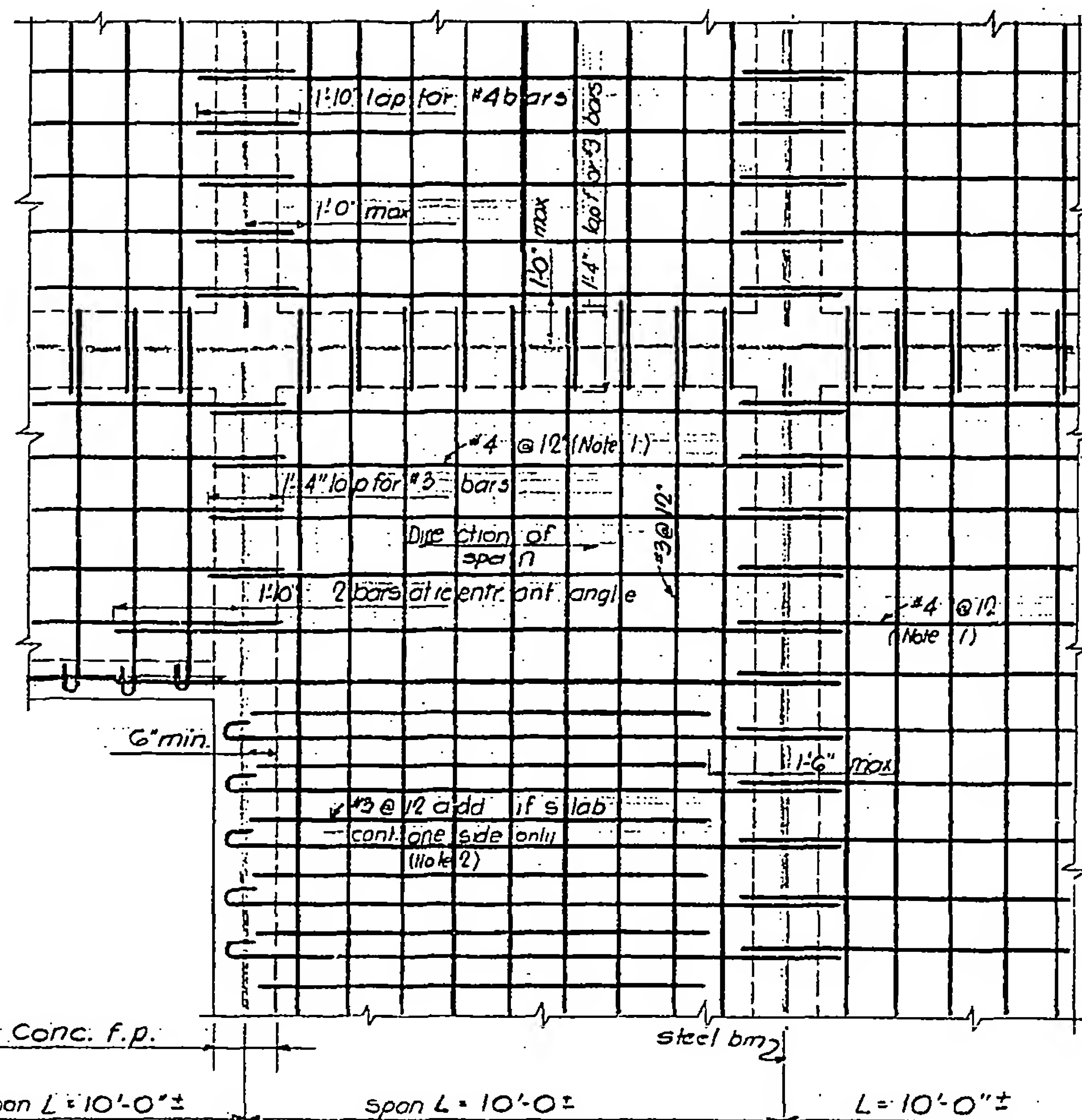
PROJECT THE WORLD TRADE CENTER

TITLE TYPICAL SLAB AT E1, 274', 284', 294', 310'

DATE 5-1-68

REVISIONS

8-20-68



Notes:

1. For spans $L \leq 8'-0"$ or less, and in slabs $12'-0" / 10'-0"$ or less, use #3 @ 12" instead of #4 @ 12".
2. Omit #3 @ 12" added bars where span L is $6'-0"$ or less.
3. Bars in direction of span placed in bottom layer.
4. Splices are shown schematically. Actually, splices are to be staggered, see 8-AB1-2.2, Note #5.



8-AB4-21.1

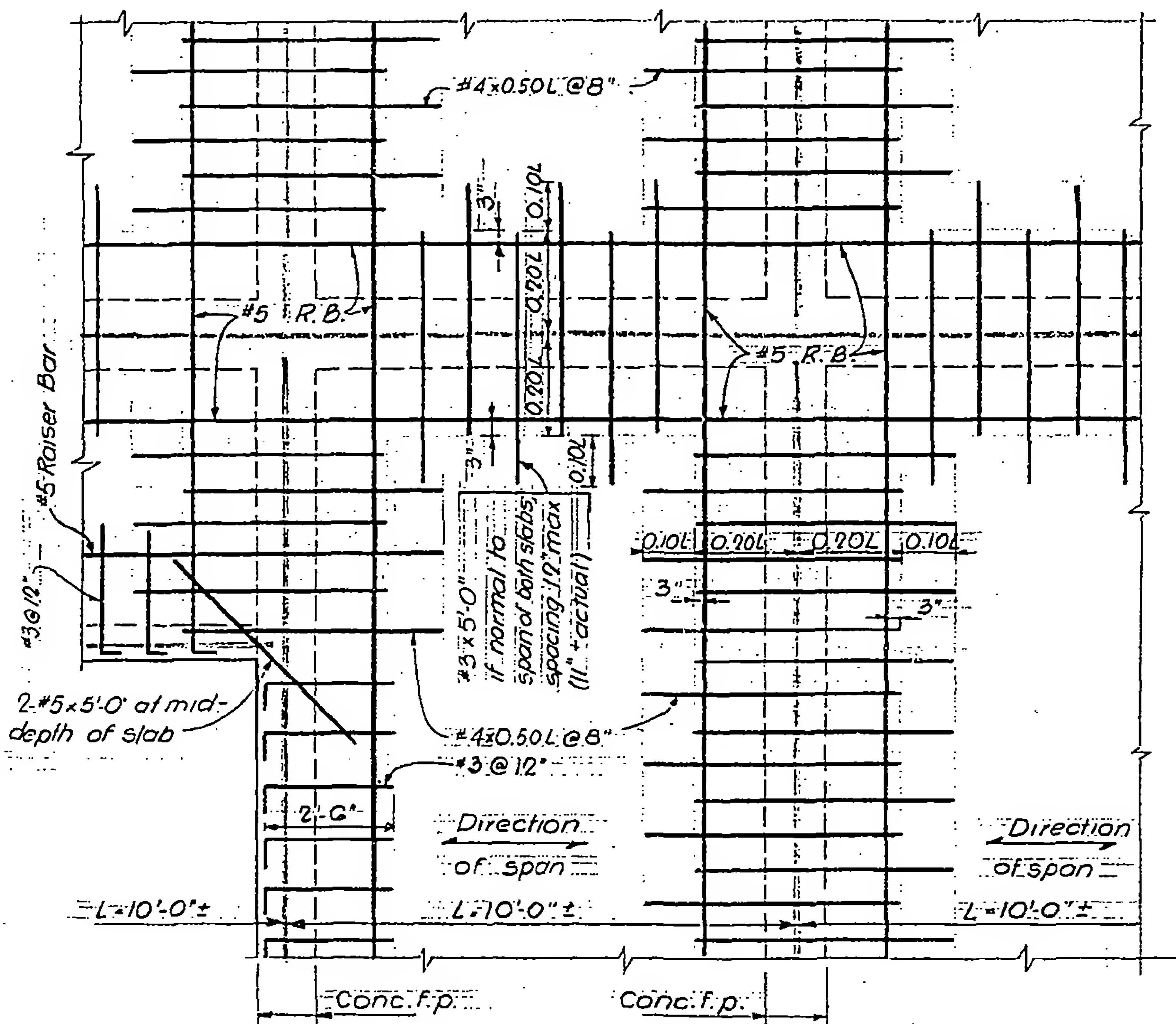
PROJECT THE WORLD TRADE CENTER

TITLE TYPICAL SLAB AT E.L. 274', 284', 294', 310',

DATE 5-1-68

REVISIONS

8-20-68

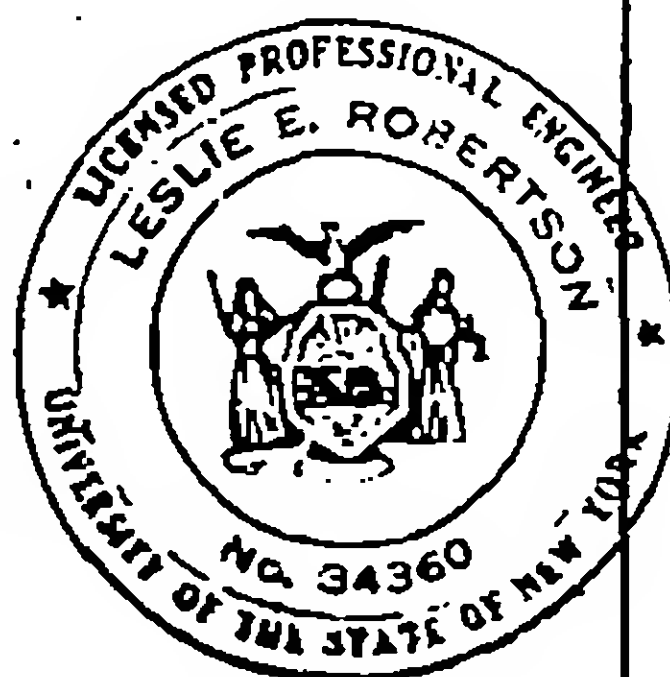


Notes:

1. Where "L" of adjacent spans varies, use the larger of the two.
2. Where "L" on both sides of a beam is not larger than 7'-0" for end spans or 8'-0" for interior spans, use #4 @ 12" Top bars instead of #4 @ 8".
3. Raizer bars are shown schematically only. See Notes on 8-AB1-3.1.

Top Bars

8-AB4-21.2



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TITLE

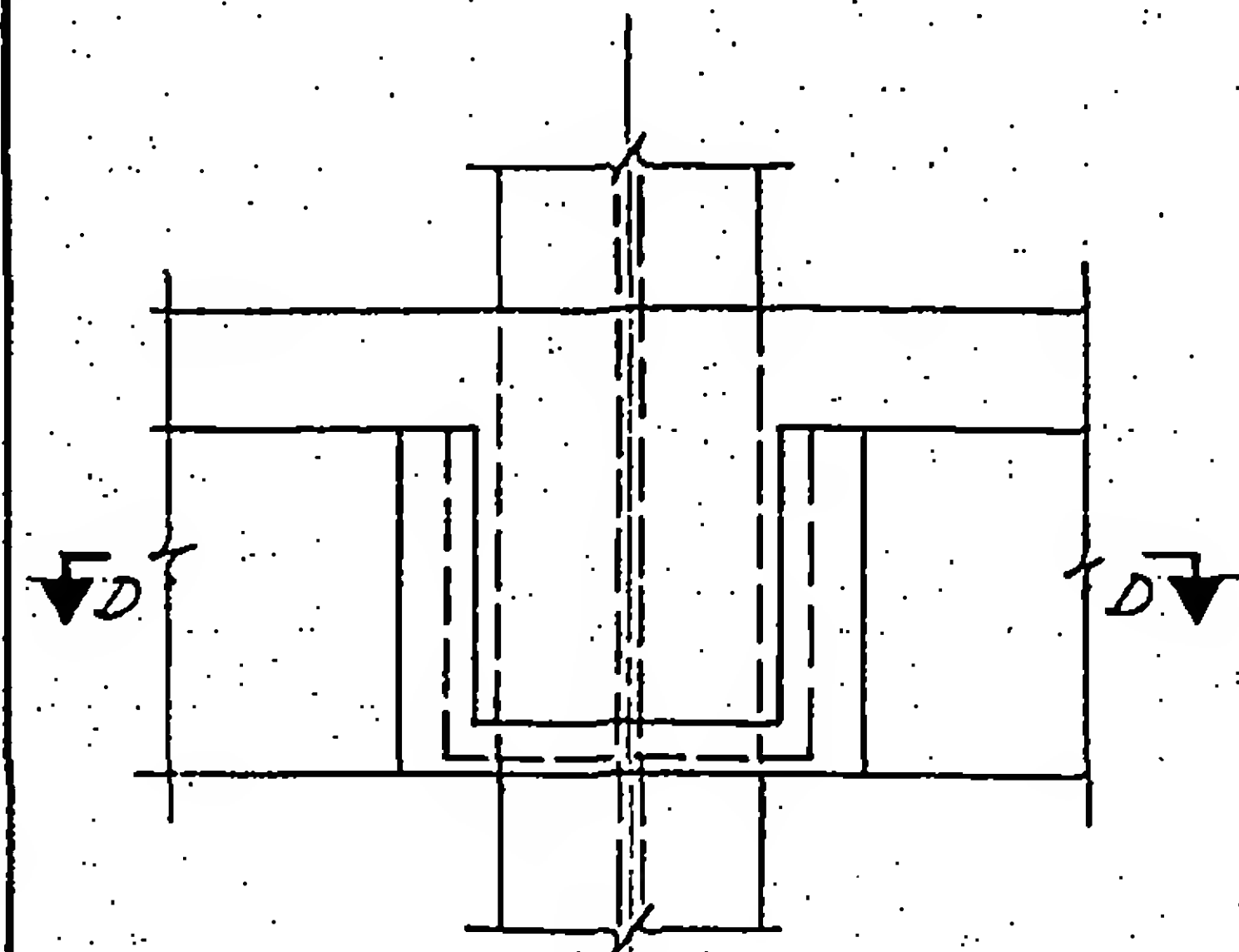
FIREPROOFING AT WF COLS BELOW EL. 310'

DATE

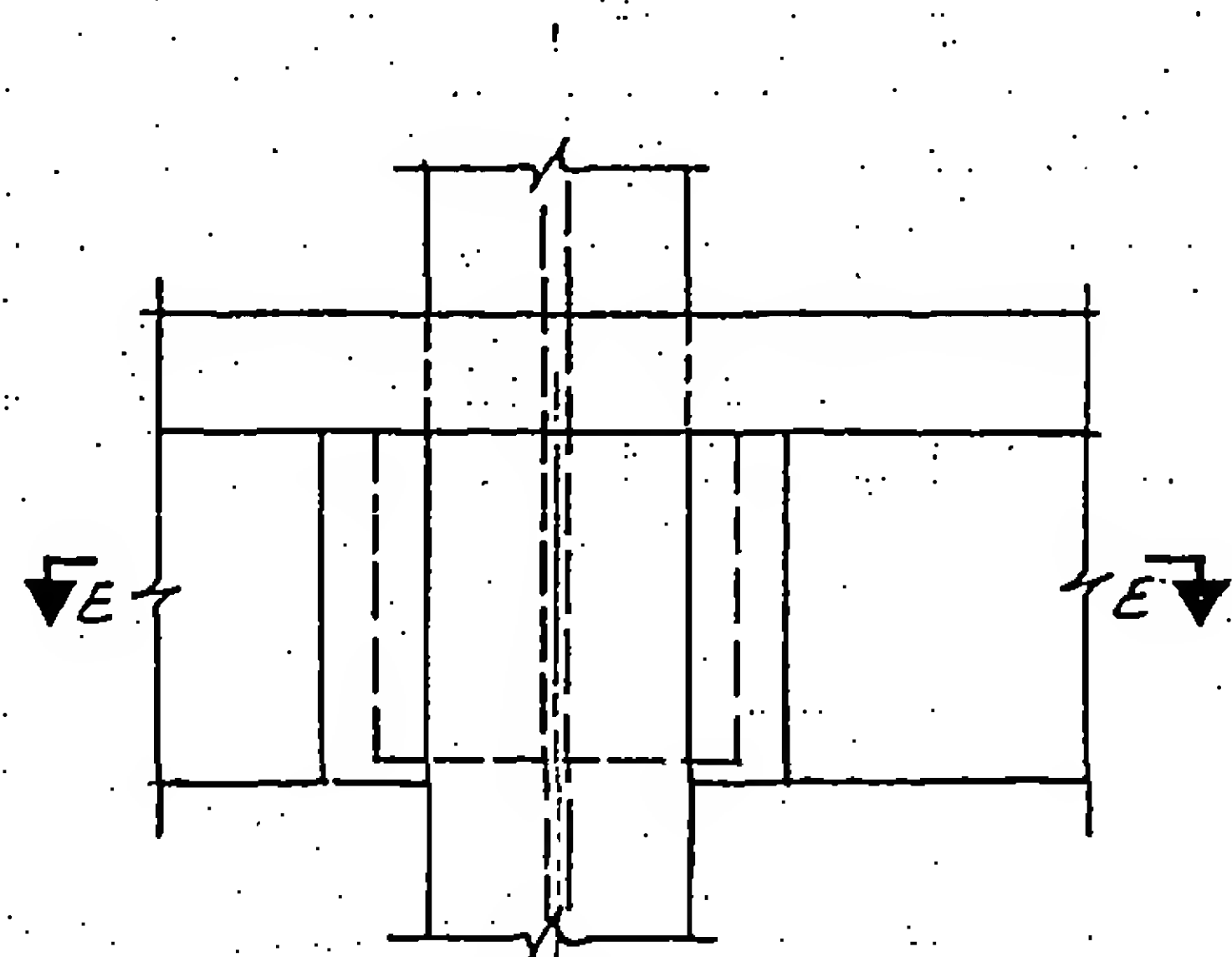
5-1-68 J.L.M.

REVISIONS

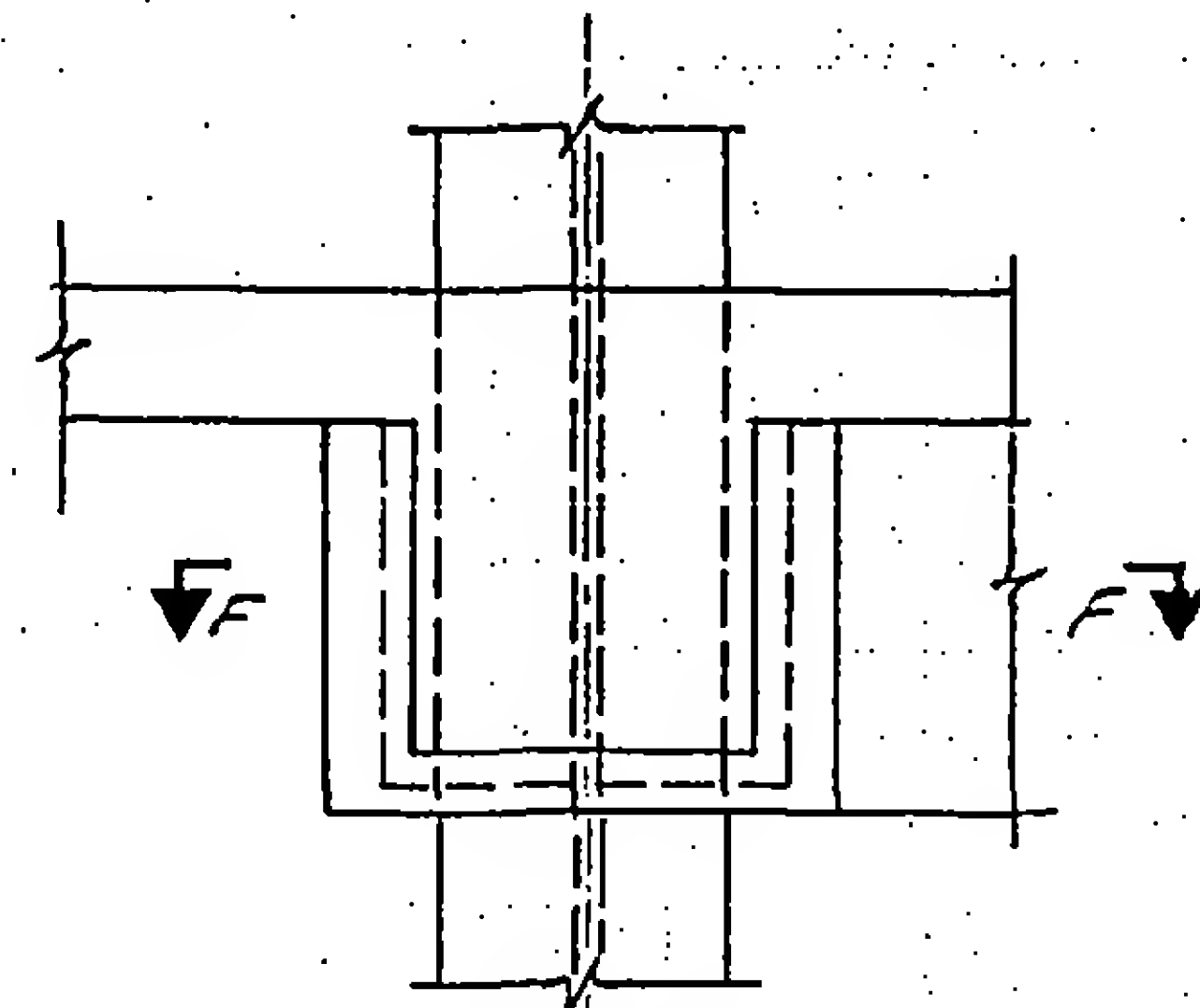
8-20-68



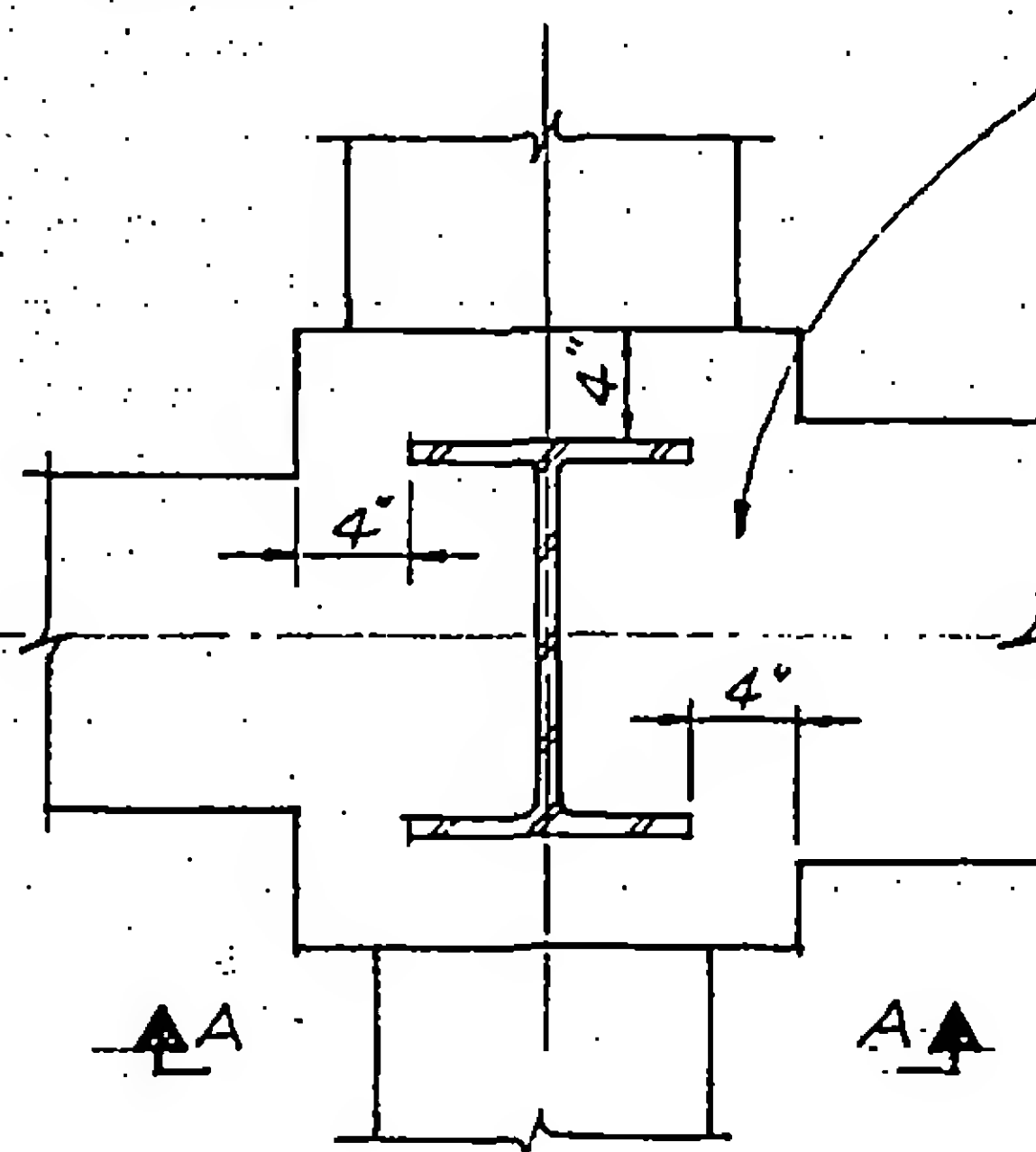
Section A-A



Section B-B

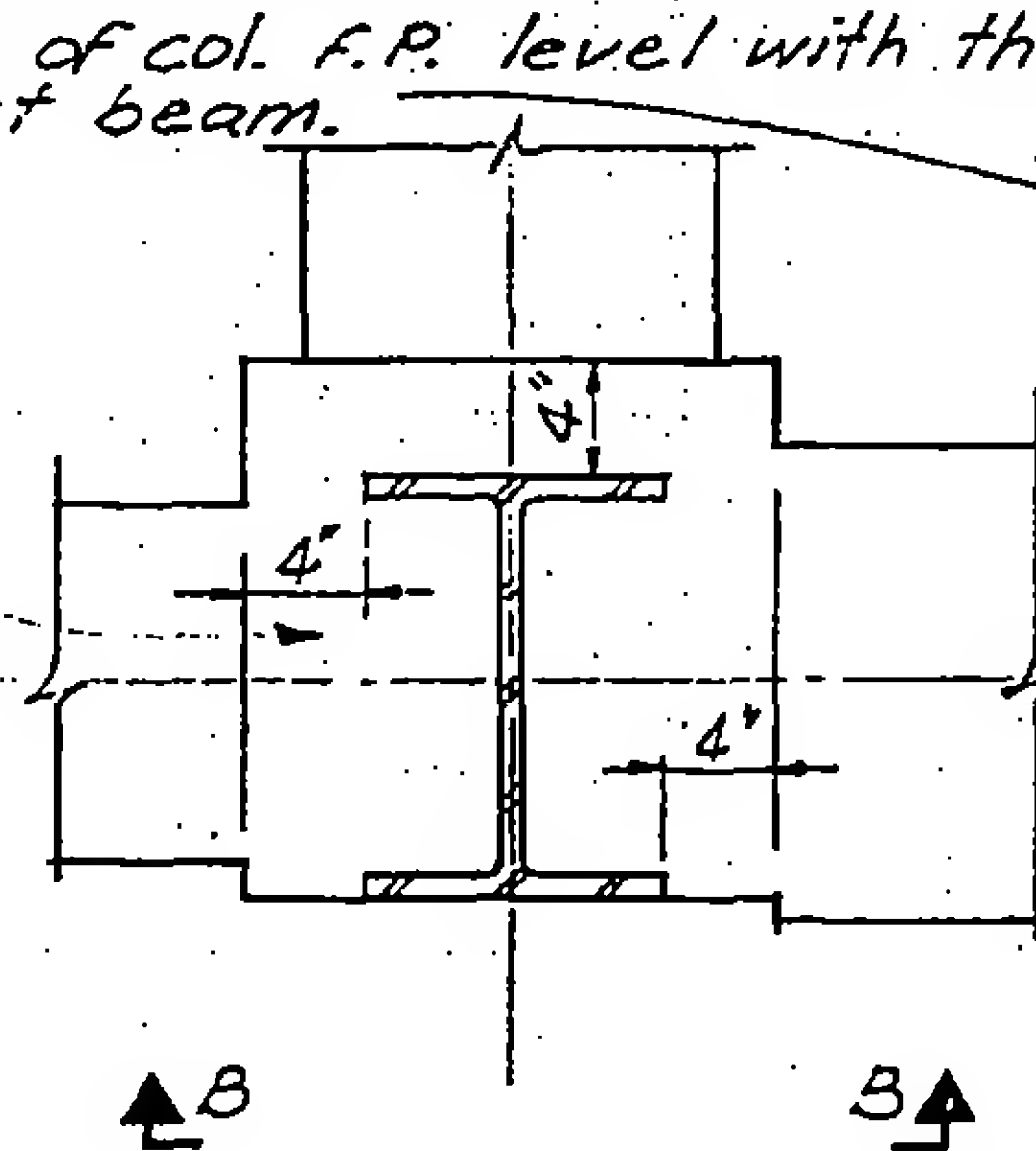


Section C-C



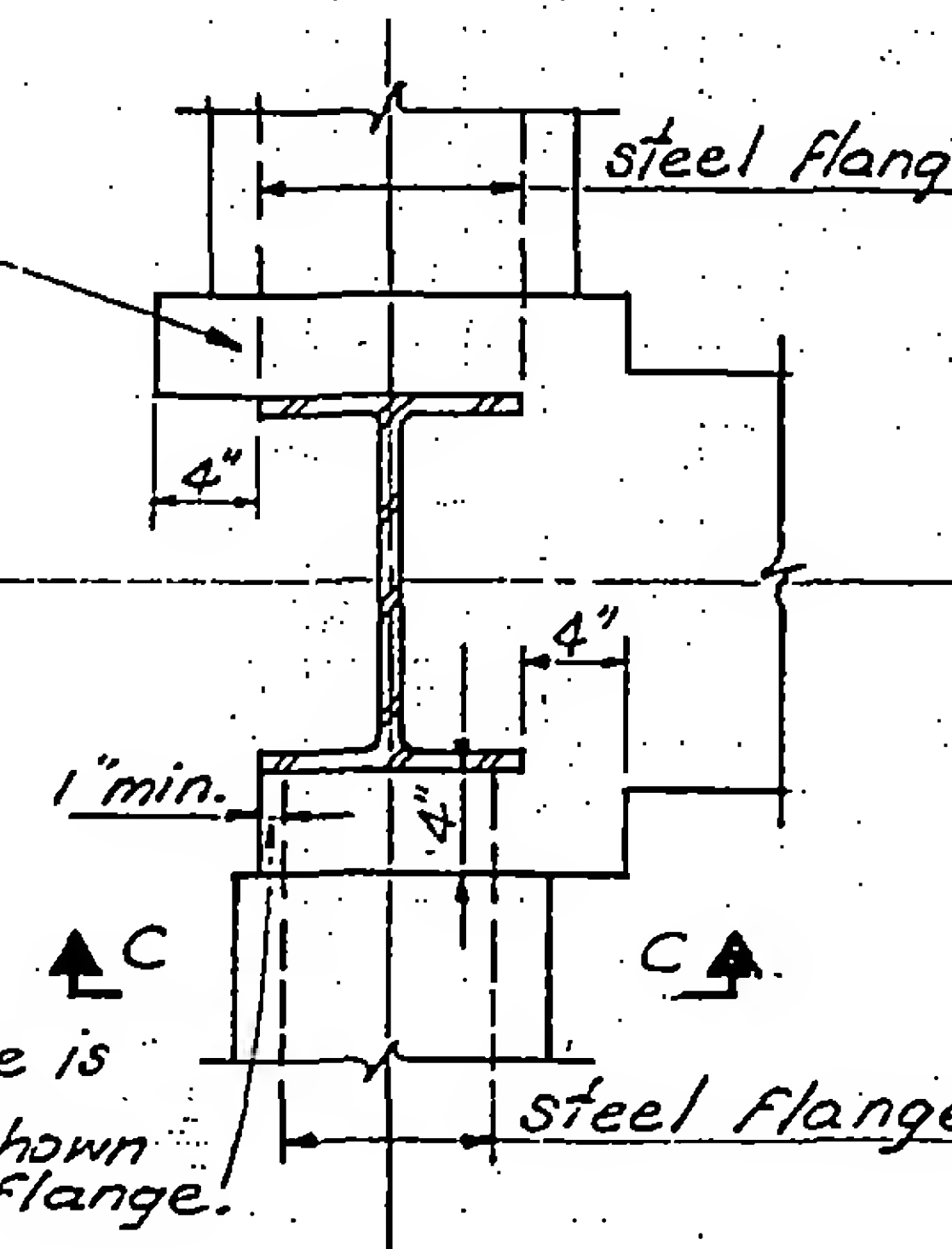
Sect. Plan D-D

Typical where a beam
frames into each face
of col.



Sect. Plan E-E

Typical where no beam is
connected to one col.
flange.



Sect. Plan F-F

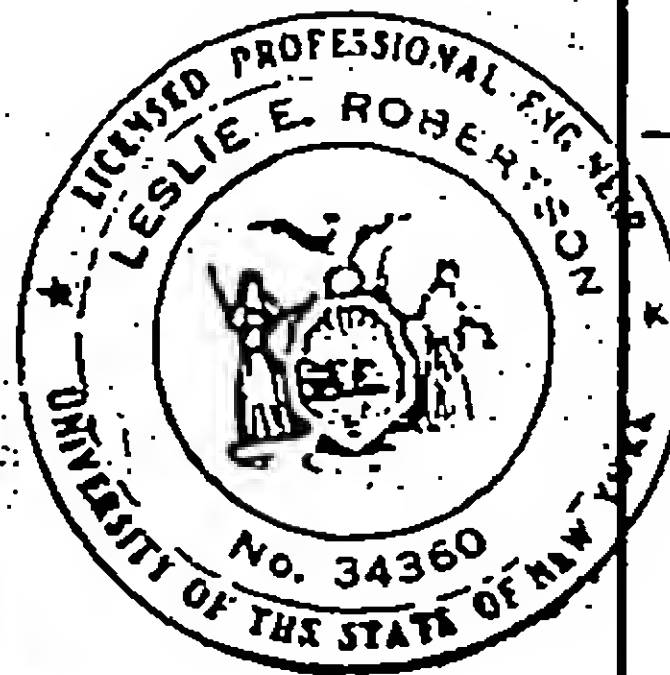
Typical where no beam is
connected to one side
of col. web.

Soffit of col. f.p. level with that of
deepest beam.

If this distance is
less than 1" use
arrangement shown
for other col. flange.

Note: Provide WWF as Details 8-ABI-5 & 6

8-AB4-22



ABJ-4401-12K

